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April 18, 2017

Mr. Glen E. Vereb
Director, Border Security & Trade Compliance Division
Regulations and Rulings, Office of Trade
U.S. Customs and Border Protection
90 K St. NE., 10th Floor
Washington, DC 20229–1177

Re: Comments of the International Marine Contractors Association to U.S. Customs and Border Protection's January 18, 2017 Proposed Modification and Revocation of Ruling Letters Relating to Customs Application of the Jones Act to the Transportation of Certain Merchandise and Equipment Between Coastwise Points (the "Notice")

Dear Mr. Vereb:

We write to submit these comments to U.S. Customs and Border Protection ("CBP") regarding the above-captioned Notice.

On January 18, 2017, CBP published a proposed modification and revocation of certain ruling letters previously issued by CBP, now subject to public comment following an extension that was granted by CBP, by April 18, 2017 (the "2017 Notice"). The 2017 Notice, if adopted, would largely reverse the holdings under numerous CBP letter rulings specifically enumerated in the 2017 Notice, in addition to *any other* letter ruling issued by CBP in respect of the issues addressed in the 2017 Notice, whether such letter ruling is mentioned in the 2017 Notice or not (collectively, the "Letter Rulings").

The Letter Rulings represent decades of discussion and cooperation and industry practice between industry and CBP in respect of the types of items that may be carried on vessels as "vessel equipment", which industry has relied on in planning, conducting and funding offshore oil and gas projects. The 2017 Notice, however, if implemented, does not provide industry with any clear guidance on how CBP intends to enforce the Jones Act for offshore projects going forward and leaves many questions unanswered. As discussed below, if the 2017 Notice is adopted, this development will undoubtedly lead to operational delays and increased operating costs where companies will be required to hire coastwise-qualified vessels for operations that previously did not require such vessels or where such vessels are not available. ***In some instances, oil and gas operations in the U.S. Gulf will likely cease entirely, costing U.S. citizens their jobs, and harming U.S. companies, U.S. economic security and U.S. energy independence***.

The idea that CBP would rush into place extraordinary new regulatory constraints on the U.S. energy sector without any study or concern for the impact on U.S. jobs and businesses appears dangerously misguided. Accordingly, we concur with the industry consensus that the Notice should be immediately withdrawn for reconsideration. Should CBP decide to continue with this initiative, any prospective policymaking in this area

should be undertaken through either notice-and-comment rulemaking under the Administrative Procedure Act ("APA").

We are also aware that the American Petroleum Institute ("API") and other related trade organizations are submitting joint comments. IMCA agrees with the analysis set forth in the Trades Letter and the intent of our letter is to supplement the Trades Letter to further highlight certain issues of particular interest and importance to IMCA as well as to provide additional analysis and justification.

I IMCA AND ITS INTERESTS

The International Marine Contractors Association ("IMCA") is the largest international trade association representing offshore, marine and underwater engineering companies supporting energy related projects worldwide. IMCA has approximately 1,000 member companies promoting good practice consistent with internationally accepted standards, particularly in the areas of health, safety, environment, quality, efficiency, and technology. In that regard, standardization of technical, commercial, and uniform regulatory approaches helps achieve efficiency in a global market. IMCA endeavors to monitor changes in legislation and regulations in order to keep its members informed. Moreover, our members include leading U.S. companies, and numerous businesses with a significant presence and large numbers of employees in the United States whose financial livelihood are placed at risk by CBP's proposal.

II BACKGROUND

The Jones Act, broadly speaking, prohibits a non-coastwise qualified vessel ("NCQV") from loading merchandise at a coastwise point and discharging that merchandise at another coastwise point. The Trades Letter addresses several different issues related to the coastwise laws, which IMCA agrees with and incorporates by reference herein and need not be repeated here. Instead, the focus of IMCA' s below comments focus on the terms "merchandise" and "equipment of the vessel" or "vessel equipment."

In the 1930s, the Treasury Department recognized that the term "merchandise" should not include items of equipment that a vessel needs to function, or more specifically, for navigation, operation or maintenance of the vessel as follows:

> The term 'equipment' … includes portable articles necessary and appropriate for the navigation, operation or maintenance of the vessel and for the comfort and safety of the persons on board. It does not comprehend consumable supplies either for the vessel and its appurtenances or for the passengers and the crew. The following articles, for example, have been held to constitute equipment: rope, sail, table linens, bedding, china, table silverware, cutlery, bolts and nuts.
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> T.D. 49815(4) (March 13, 1939).

Since the 1970s, with the advent of major offshore oil and gas exploration and production, CBP and its predecessors have issued numerous letter rulings at the request of industry members, on a case-by-case basis, that clarify items that are considered vessel equipment for purposes of coastwise trade under the Jones Act. These letter rulings by and large focused on the term "operation" in T.D. 49815(4), and constructed a framework whereby the vessel's purpose or mission was determinative of what items would constitute "vessel equipment." It is primarily this aspect of the Letter Rulings that CBP specifically proposes to reverse through the 2017 Notice.

And we have been here before. CBP issued a proposed modification in 2009[1], highly similar to the 2017 Notice, in response to a complaint from the Offshore Marine Service Association ("OMSA") with respect to the so-called "Christmas Tree Ruling" (2009 Notice). In the 2009 Notice, CBP proposed to reverse many of the same letter rulings as appear in the 2017 Notice, focusing then, as now to a large degree, on the issue of what constitutes vessel equipment that a NCQV can transport between coastwise points notwithstanding the Jones Act. The response to the 2009 Notice from industry stakeholders opposed to the 2009 Notice was significant and wide-spread and CBP received comments to the 2009 Notice from every corner of the industry.

One of the primary arguments against CBP's action in 2009 was that the 2009 Notice was based on Section 625 of the Tariff Act of 1930 (19 U.S.C. § 1625), through which CBP can issue and clarify interpretations of law and regulation by way of letter rulings ("Section 625 Process"). This was an inappropriate and inadequate process for reversing (at that time) over 30 years of administrative precedent heavily relied upon by the offshore oil and gas industry on an ongoing basis for decades.

Indeed, in response to comments received regarding the 2009 Notice, the Secretary of Homeland Security decided that more time was needed in order to do a comprehensive review of the issue and to give industry more time to assess the impacts of the 2009 Notice on the industry. In fact, the Deputy Director of the Private Sector Office of the Department of Homeland Security ("DHS") explained the procedural shift as follows.

> We understand that significant confusion and concern remains within the maritime industry regarding the state of the law. Because of the level of confusion and potential scope of impact that a change in law could have on important maritime industries, DHS has decided to initiate a rulemaking action, subject to public notice and comment, to allow for a full consideration of the potential economic impact of any change in CBP's interpretation or application of the Jones Act and related laws as it pertains to the transportation by non-coastwise qualified vessels in U.S. waters of certain equipment and materials for use in the maintenance, repair, or operation of offshore, subsea energy extraction operations. We understand that a rulemaking action can be a lengthy process; however, notice and comment rulemaking provides us with the most information on the economic impact of any decision by DHS on this matter — including the impact on the U.S. energy industry and the U.S. maritime industry — and affords the maximum public transparency into the Department's decision-making process on this important issue.

Ultimately, the 2009 initiative was dropped entirely for many of the same reasons discussed in these comments. Nothing has changed since 2009 that should allow the 2017 Notice to proceed or that warrants reconsideration of CBP's previously flawed proposal. Indeed, the 2017 Notice is even more flawed than its earlier effort, as it proposes to revoke numerous rulings without providing any details as to the effect of the changes on other letter rulings, potential enforcement and impact on offshore operations overall going forward despite the undeniable and immense adverse impacts on the industry. In comparison, the 2009 effort at least CBP proposed a number of modified rulings so that industry had some idea of the ultimate impact if implemented. Here, the 2017 Notice would void numerous rulings representing decades of precedential guidance, while only modify one of those rulings, sowing extreme confusion regarding the many other impacted operations outside that single modified ruling.

Moreover, with regard to the facts, the only difference between the facts as they stand today and as they were in 2009 is that the owners of coastwise-qualified vessels ("CQVs") assert they now have vessels that can handle some offshore installation and other work that their vessels in 2009 could not handle. But, as we have heard

1 "Proposed Modification and Revocation of Ruling Letters Relating to the Customs Position on the Application of the Jones Act to the Transportation of Certain Merchandise and Equipment Between Coastwise Points," 43 *Customs Bulletin* 28 at 54 (July 17, 2009) (the "2009 Notice").

over the years from these same owners, the scope of the Jones Act is not dependent on the availability of CQVs to do the work, except in emergency situations which do not apply here. And in any event, as the IMCA Fleet Study shows, the current state of CQVs is that there (1) is not enough U.S. tonnage to handle the backlog of projects that will undoubtedly be rekindled when commodity prices return to more economically viable levels; and (2) in some cases, no CQVs currently exist or are being built that can handle the work at all, or even specific offshore construction or heavy lift projects.

Moreover, IMCA is concerned that CBP's abrupt proposed reversal of decades of legal precedent is the result of intensive lobbying and closed-door discussions with special interest groups representing the Jones Act shipping industry, who represent only a small subsection of the U.S. companies, workers, and stakeholders in the offshore energy sector. IMCA has filed multiple FOIA requests for records of those communications, and has to date received back from one CBP office dozens of pages of exchanges between Jones Act representatives and CBP policymakers related to CBP's policy shift, however, those documents are almost entirely redacted under the pretense that they constitute "trade secrets" or "commercial/financial" information of the Jones Act special interests. Other FOIA requests to key CBP offices have gone unanswered and currently are under appeal, raising questions that CBP is relying on skewed and inaccurate non-public information from a narrow group of interested parties.

In addition, both CBP and the Department of Homeland Security ("DHS") have refused to meet with industry stakeholders on the other side of the Jones Act special interest groups to date. Given the one-sided nature of CBP's and DHS's communications with industry parties on this issue, we urge CBP and DHS to meet in person with IMCA and other interested persons on the other side following the end of the comment period to more fully understand to practical and operational impacts of the Notice. The precedent for such meetings clearly exists, as both CBP and DHS undertook similar outreach when considering its 2009 notice.

III THE FACTS AND WHY THEY MATTER

A. Multiple Studies Show Why NCQVs Are Critical to Offshore Oil and Gas Development

IMCA, API, as well as other industry stakeholders and organizations, can present to CBP multiple policy, legal, and administrative arguments as to why the 2017 Notice should be withdrawn. Because, however, the facts ultimately speak the loudest, we attach, two substantive and conclusive documents with this submission, each of which we urge CBP to and consider:

Appendix I: *Marine Construction Vessel Impacts of Proposed Modifications and Revocations of Jones Act Letters Related to Offshore Oil and Natural Gas Activities* (the "Fleet Analysis"). The Fleet Analysis brings a conclusion to the forefront that cannot be ignored: NCQVs not only provide the bulk of offshore service in the U.S. Gulf, but also they cannot be readily replaced with existing CQVs, as there are no equivalent CQVs nor are there CQVs under construction that can be expected to step into the breach. The disruption to the offshore oil and gas industry will therefore be immediate and significant. This appendix contains a case study of an ultra-deepwater Project in Gulf of Mexico (the "Case Study"). The Case Study is a summary of an actual deepwater oil and gas project, describing the types of specialized vessels required for each stage of the project. Most of these specialized vessels are NCQVs, and in some instances, could only have been NCQVs. The Case Study thus demonstrates the danger of attempting to cherry pick any particular aspect of the offshore oil and gas industry, as ultimately the offshore industry overall relies on NCQVs as they provide essential and unique services that are irreplaceable.

Appendix II: *Economic Impacts of Proposed Modification and Revocation of Jones Act Ruling Letters Related to Offshore Oil and Natural Gas Activities*, prepared for API by Calash (the "Economic Impact Study"). The Economic

Impact Study readily demonstrates that the impact of the 2017 Notice will be a net loss of U.S. jobs and cumulative loss of GDP of approximately $90 billion through 2030.

B. The 2017 Notice Is About More Than Just Transportation ("500m Safe Zone" and "Incidental Movement")

While the 2017 Notice purports to implicate only the transportation of items from one U.S. coastwise point to another, it will in fact have a much broader effect.

The owners and operators of NCQVs in the U.S. Gulf of Mexico have stated recently, similar to what was said in 2009, that the 2017 Notice could result in a serious disruption of work in the offshore U.S. oil and gas industry. CBP and supporters of the 2017 Notice may reply that the 2017 Notice does nothing other than require certain items to be transported to the worksite by a CQV, and if a NCQV will install those items, then they can be transshipped from the CQV to the NCQV at the installation site. According to those that support the 2017 CBP Notice, because some operators, including foreign flag vessel owners and operators, already use CQVs for this purpose, there should be no issue, aside from an increase in the cost of the work, which would eventually be absorbed by the industry.

CBP should by now be aware that this is simply not the full story. So long as the items defined by the Letter Rulings as "equipment of the vessel" remain so defined, the Jones Act is not implicated in their carriage at all; there is thus no discussion about the Jones Act and these items unless and until they become "merchandise." The 2017 Notice would accomplish that aim, and would thus require that these items be transported from the dock to the offshore block by a CQV, but this would only be the first step.

Importantly, the 2017 Notice fails to consider the other offshore movements after items are transported offshore by a CQV, discussed in more detail below, which if prohibited, will stall, if not terminate current offshore operations, thereby adversely impacting not only foreign NCQV, but also adversely affecting CQVs. Where offshore operations decrease or are eliminated, CQVs will no longer be needed to transport items offshore.

Often offshore projects require so-called "safe zone movement." A vessel that is to install equipment on the seabed is often doing this work in a location that has some seabed development/infrastructure already. Transshipment at sea from one vessel to another by way of a crane is a dangerous activity, and if the item being transshipped is dropped over the installation location, then it would sink to the sea floor and possibly damage existing infrastructure. If the transshipment occurs in an area where there is no existing infrastructure directly below the vessels, then the only loss from an accident in transshipment is the item being carried. For this reason, offshore operators require that any transshipment take place away from the installation area. In short, industry has for decades viewed movement associated with such heavy lift and installation operations as construction/deconstruction, and not transportation because the movement is conducted after the transportation is completed or before the transportation is started depending on the operation at issue.

If the item to be installed, which is currently considered "vessel equipment," becomes "merchandise," then the Jones Act is implicated and this safe zone movement, which is done for important safety reasons, will become subject to Jones Act review and restrictions under CBP's "incidental movement" concept. Although CBP has not specifically defined "incidental movement, it has long held that the use of a non-coastwise-qualified vessel to load and unload cargo or construct or dismantle a marine structure is not coastwise trade and does not violate the coastwise laws provided that any movement of merchandise is effected exclusively by the operation of the crane and not by movement of the vessel, except for necessary movement which is incidental to a lifting operation while it is taking place including pivoting 360 degrees on its central axis. Recently, CBP has applied this

restriction to operations involving heavy lifts under the so-called Koff rulings.[2] This has created great confusion and consternation and makes no practical sense because this incidental movement is clearly not a transportation movement that should be subject to the Jones Act.

This issue is possibly raised in the 2017 Notice involving the revocation of HQ 113838 (February 25, 1997).[3] Unfortunately, this "safe zone/incidental movement" issue remains unresolved at this time, has far reaching impacts on overall offshore operations, and should be resolved as soon as possible. Ultimately, to prohibit such movement would impose potentially serious safety hazards and shut down offshore operations almost completely. In other words, the combination of these developments will mean that an NCQVs cannot move *at all* with such items on board (except on its axis) without risking a Jones Act violation, assuming the items are unladen at some point.

Ultimately, OMSA's goal, and understandably so, is to secure not only the work of transporting the items currently defined in the Letter Rulings as "vessel equipment," but also the work of installing those items, all without the competition from NCQVs if at all possible. In reality, as amply demonstrated by the Fleet Analysis, there simply are few CQVs that can perform the tasks, and for many tasks, none at all.

Thus, it is critical that any action that CBP may take to revoke or modify rulings in the future, including any possible decision rendered by CBP pursuant to its Section 625 Process Customs should the 2017 Notice not be withdrawn, must include within the scope of such action a new definition of "incidental movement" which will modify/revoke the current rulings to clarify/confirm that "incidental movement" necessary for safety purposes during construction/deconstruction activities should be permissible after the transportation activity is completed and that this "incidental movement" is not transportation subject to the Jones Act.

In this regard, IMCA provides the following potentially workable solution to resolve this important issue. Our proposal would both protect Jones Act transportation, OMSA's big concern, while alleviating industry concerns over an offshore shut down due to the inadequate supply, or in many cases nonexistent CQV's (as delineated in IMCA's vessel study) to conduct the tasks needed to perform the installation work related to multi-billion dollar oil fields, which in turn enhances American independence from foreign oil.

As noted above, a 500 meter (m) (or 1,640 ft) safe zone is commonly used as a protected area around an offshore installation or worksite, and any vessel entering the 500m safe zone needs to seek permission from the installation to enter, thus controlling simultaneous operations and potentially alleviating ship to ship collisions. In addition, where possible lifting operations are conducted, this 500m safe zone is used to reduce the risk of a dropped object, some of which can range into hundreds of tons in weight, causing damage to the sub surface infrastructure or in a worst case, a substantial oil spill.

As previously mentioned, this "construction" concept should not be subject to the Jones Act because it occurs either before transportation begins or after it is completed. Another way to look at it is that it is reasonable to

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2 Under what have become known recently as the Koff Rulings (HQ 225102, dated September 14, 2012; HQ H235242, dated November 15, 2012; and HQ H242466, dated July 3, 2013), CBP has taken the position that movement of a vessel, even a short distance, while a topside is suspended from its crane, off its central axis in order to avoid hitting the SPAR before unlading the topside onto the SPAR, is a violation of the Jones Act because this movement of the vessel is interpreted by CBP as providing part of the transportation of the topside between a point in the U.S. and the SPAR (*i.e.* a foreign flag vessel cannot be used for any part of the transportation between two coastwise points).

3 This ruling confirmed that use of a non-coastwise-qualified derrick barge to load and unload cargo or construct or dismantle a marine structure is not coastwise trade and does not violate the coastwise laws, provided, that any movement of the merchandise is effected exclusively by the operation of a crane aboard the derrick barge and not the movement of the vessel, except for necessary movement which is incidental to a lifting operation while it is taking place. While the apparent reason for the revocation of HQ 113838 is based the vessel equipment determination, in the event this ruling is revoked, it is unclear what, if any, impact such revocation will have on other rulings involving incidental movement.

separate oil and gas "transportation" from "construction," in the same way that a truck might deliver bricks to a building site in the United States, then a forklift offloading those bricks and moving them within the worksite would not be considered transportation.

Accordingly, many of the significant concerns with the Jones Act would be resolved if industry were able to agree that transportation related to the Jones Act ended upon arrival at the 500m safe zone, and that activities occurring within the 500m safety zone after the transportation were completed would be considered construction activities. Then all parties would be secured in their concerns - Jones Act transportation would be protected - and work necessary to safely conduct installation activities would also be protected.

C. Much More Than the Construction Market Will Be Affected

The analysis, however, does not stop with installation. The 2017 Notice specifically notes, for example, that chemicals and cement are possibly to be recategorized as merchandise. In that event, no NCQV drilling rig could move with these items on board, except by turning on its own axis. While some operations involve the transshipment of materials directly over the well, not all of them do for operational or safety reasons, and in addition, some rigs take on enough material to conduct multiple well projects, meaning they move from well to well without discharging these materials.

Further, no NCQV, whether a construction vessel or drilling rig, would be able, in an emergency situation, to move off a well or installation location with any item of merchandise on board without the risk of incurring a Jones Act violation. The 2017 Notice would therefore throw the drilling industry into confusion, as only coastwise qualified rigs could operate in the U.S. Gulf of Mexico with important operational materials on board without fear of violating the Jones Act. There are currently zero deepwater coastwise-qualified drilling rigs in the U.S. Gulf of Mexico. This will in turn require operators to rethink their investments in offshore leases.

As pointed out in the introduction, the Case Study demonstrates the need in any major offshore development for multiple vessels of varying capabilities. The project summarized in the Case Study required early stage exploration, for which a deepwater drilling rig or drillship was required. There are no CQV vessels meeting the technical qualifications. The product would have to be moved through an FPSO; there are no CQV's that can act as an FPSO. The FPSO has to be moored by a heavy lift vessel capable of making certain lifts in deep water. There are no CQV's currently available with this capability.

The deepwater wellhead assemblies have to be installed by a vessel with sufficient lifting capacity. While installation itself is not coastwise activity, the general offshore requirement of transshipping items to be installed on the seabed in an area away from the installation site for safety reasons means that the installing vessel will have to move a limited distance (*i.e.,* from the safe zone-where the assembly is unladen from transshipment vessel and laden onto the installation vessel - to the installation site) with the item on board. This is also the case for the artificial lift system and mudmats. The risk that this movement may be considered coastwise carriage by CBP is enough, however, to discourage the use of a larger, safer NCQV with the proper and necessary crane capacity. And in the case of items such as the subsea distribution hardware, there are no CQVs capable of handling the installation.

In addition, with regard to installation operations, even though no pipelaying ruling would be explicitly revoked by the 2017 Notice, the Notice creates great confusion regarding the legal status of pipelaying and installation of equipment integral to the lay operations, leaving open the possibility that transportation of reeled pipe and items such as PLETs and jumpers must be transported to offshore installation sites only by CQVs. This is because although CBP's Notice does not appear to target pipelaying, in particular, installation operations for cable/umbilical/flowline, which has for decades been seen and treated by CBP as akin to pipelaying, may be adversely impacted as the CBP Notice proposes to revoke a number of rulings in full that clearly target the transportation, and potentially the installation, of flowlines, umbilicals, and cable, but not pipe.

As is amply demonstrated in the Case Study, virtually every aspect of an offshore oil and gas development project involves the need for a vessel with specialized capabilities, which in the U.S. Gulf means NCQVs, as the fleet of CQVs simply cannot handle the work. Certain aspects of the work, as demonstrated in the Case Study, are as of today entirely outside of the capability of any existing CQV. Each one of these aspects is endangered by the scope of the 2017 Notice, in large part because of the practical issues surrounding transshipment of equipment and materials.

The Fleet Analysis points out one other issue of major importance (see Appendix I, Section 8): certain of the more highly specialized vessels used in offshore work cannot be supported by any single domestic market. This means that to support the investments needed for such vessels, they must be able to find work across the globe. Without the NCQVs for these niches, deepwater projects in the U.S. Gulf of Mexico will stop.

It would be an unrealistic leap of faith to assume that U.S. shipbuilders would be able to produce any time soon, if at all, the sort of vessels needed to replace the most highly specialized NCQVs necessary for deepwater construction and repair. Currently, U.S. shipyards lack the track record and facilities to produce the most highly specialized offshore construction vessels, and the development of such shipbuilding capability domestically would take many years to evolve. Even if U.S. shipbuilders developed such capacity, the pricing differential between U.S.-built ships and those from leading offshore shipbuilding nations is so substantial that those units likely would be economically uncompetitive for non-US projects. This is an important point, because highly advanced offshore vessels must compete to service projects on a global basis to offset their extraordinary cost. Therefore, it is doubtful that U.S.-made alternatives ever would be built. Proceeding with the Notice while such critical economic issues remain outstanding therefore puts the entire offshore sector at tremendous risk.

Another important factor to take into consideration is that if this Notice were implemented, the uncertainty created by a new Jones Act regime, and depending on the costs required to perform work offshore, would likely result in owners and operators of the foreign flag vessels moving their equipment out of the U.S. Gulf of Mexico and instead either work in other countries where there is more certainty, or for example, moving their base of operations to Mexico to avoid potential Jones Act issues. If this action was taken, the loss of U.S. jobs and adverse impacts to the U.S. economy would be drastically impacted because U.S. coastwise qualified vessels would no longer be needed to perform work and U.S. shipyards would suffer because topsides construction, currently accomplished in the United States, could then be performed in foreign shipyards.

D. <u>The Economic Effects Will Be Dire</u>

IMCA refers to the independent study prepared by Calash on behalf of API on the potential economic impacts that could result if 2017 Notice was implemented by CBP. In summary, some of the key impact include:

Specifically, according to a Calash economic report, the impacts of this notice could include:

- Loss of nearly 30,000 industry supported jobs in 2017 with as many as 125,000 jobs lost by 2030. The Gulf of Mexico states will be the most impacted by these job losses;
- Decrease in U.S. oil and natural gas production by 23% from 2017-2030;
- Decrease in government revenue by $1.9 billion per year from 2017-2030;
- Decrease of $5.4 billion per year on Gulf of Mexico offshore oil and natural gas spending and;
- Cumulative lost GDP of $91.5 billion from 2017-2030.

Accordingly, the API economic impact further supports reasons why the 2017 Notice should be withdrawn for further consideration. In the interest of sound policymaking, we would further urge the Administration to undertake its own independent expert economic analysis to better understand the risks to U.S. jobs, energy

production, revenue, economic activity and other critical issues raised by the Notice and highlighted by the API study before even considering taking further action on the CBP initiative.

IV THE LETTER RULINGS SHOULD NOT BE REVOKED

A. The 2017 Notice Relies on T.D. 49815(4) but Fails to Analyze it Properly

In the 2017 Notice, CBP states in essence that the scope of equipment that a NCQV may carry is defined by T.D. 49815(4). A NCQV may therefore carry any item if it is necessary for any one of navigation, operation or maintenance. T.D. 49815(4) did not define the term "operation"; however, its normal definition includes the performance of a function or carrying out of an action or mission. The Letter Rulings, in turn, in deciding that the test of whether a particular item is vessel equipment based on the vessel's operations, looked to whether the item was necessary for the vessel's function or mission. The Letter Rulings thus apply a definition for the term "operation" that is entirely consistent with a normal definition of the term.

The 2017 Notice does not expound on why this application of the plain meaning of the term "operation" is incorrect or misapplied, nor why it is in any way inconsistent with either prior rulings or existing law. The 2017 Notice only states that the definition used for decades by CBP is "less consistent with the more narrow meaning of 'vessel equipment' contemplated by T.D. 49815(4)" but does not detail any specific inconsistency.

Although pointed out in the Trades Letter already, it is worth repeating that CBP is suggesting that an item is "vessel equipment" only if it remains at all times with the vessel. But if there is no unlading of an item at a coastwise point, then there is no carriage for which the Jones Act is applicable and there would be no point in even discussing whether an item is exempt from the Jones Acts purview.

B. Reasoned Justification Is Not Supported by Amendments to OCSLA and Jones Act

With respect to its proposed substantial modification of HQ 101925, CBP indicates that it is changing the ruling "to make it more consistent with federal statutes that were amended after HQ 101925" -- which means after 1976. 2017 Notice at 2. CBP also states that "[m]any of the holdings in HQ 101925 are no longer applicable due to amendments made to 46 U.S.C. § 55102 . . ., the Outer Continental Shelf Lands Act, and 19 C.F.R. § 4.80b(a), resulting in less consistency with 46 U.S.C. § 55102." *Id.* at 3.

CBP does not make a serious attempt to provide any justification for the questions its statements raise – What changed in the OCSLA, CBP regulations, or the Jones Act since 1976 which requires reversing 26 rulings issued over 40 years?

Nothing in the 1978 amendments to OCSLA could possibly justify restricting the operations of foreign-flag vessel in the manner proposed in the 2017 Notice. The 1978 amendments, in pertinent part, struck the words "fixed structures" from section 4(a) of OCSLA (the jurisdictional section) and replaced those words with the "permanently or temporarily attached to the seabed" language. There is nothing in that amendment which derogates from CBP's views in HQ 101925 regarding incidental transportation, *de minimis* materials or unforeseen repairs. There is simply no connection between the two. Indeed, Congress indicated that the section 4(a) change was not meant to change law: "The intent of the managers in amending section 4(a) of the 1953 OCS Act is technical and perfecting and is meant to restate and clarify and not change existing law." H. Conf. Rep. 95-1474, 80, 1978 U.S.C.C.A.N. 1674, 1679.

With the Jones Act, the case for using a subsequent law change as a justification of the 2017 Notice is even weaker. The Jones Act change CBP relies upon in part is the 1998 statutory addition of "valueless material." The other Jones Act justification is that the Jones Act does not contain the words "'necessary for the accomplishment

of the mission of the vessel,' 'incidental to the vessel's operations,' or 'expended' during the course of repair." 2017 Notice at 14-17.

Although not stated plainly, CBP appears to suggest that if "valueless material" is "merchandise," then everything is "merchandise." 2017 Notice at 17-18. This is belied by the words of the statute – which provide that "the term 'merchandise' includes . . . valueless material." 46 U.S.C. §55102(a). The statute does not define "merchandise" as "valueless material" or even provide a definition at all – rather, it draws in to what might otherwise be "merchandise" "valueless material" to ensure that "valueless material" is not excluded. The statute *includes* "valueless material." The statute does not *define* "merchandise" as "valueless material."

We know this to be true because the 1988 statutory addition of "valueless material" was expressly added to solve a very narrow problem, *i.e.* the problem Congress perceived in the *106 Miles Transport* case. In that case, the court determined that sewage sludge is not "merchandise" because it is "valueless material." Expressly moving to change that result, Congress included the court's term -- "valueless material" – in the statute.

Also, had Congress sought to equate "merchandise" with "valueless material" in an all-encompassing way, then it would not have simultaneously in the same 1988 legislation used the phrase "dredged material" separately from "valueless material." Pub. L. No. 100-329 (1988). "Valueless material" cannot be all inclusive and meant to include anything and everything even if valueless if it is used alongside the separate term "dredged material."

In any event, tools, risers, pipeline connectors, pipe etc. are obviously not "valueless material." So, the inclusion of "valueless material" as "merchandise" is not relevant as to whether those and similar items are "merchandise" or "vessel equipment."

As to the words of the Jones Act otherwise, they have not changed in any relevant respect since 1976. The Jones Act then did not directly provide for "vessel equipment," "sea stores" or any number of other things CBP has adopted in its authority to interpret the statute. Just as the lack of those words in the Jones Act did not prevent CBP from adopting the "vessel equipment" exception in the first place, the same lack of those words in the statute cannot provide the justification for reversing 40 years of precedent. CBP's attempt simply do an about face on 26 precedents stretching over 40 years "constitutes an inexcusable departure from the essential requirement of reasoned decision making." *Jicarilla Apache Nation v. Dep't of the Interior*, 613 F.3d 1112, 1120 (D.C. Cir. 2010).

The weakness of CBP's rationale is also evident in the timing of the rulings and the statutes. CBP has had 39 years and 29 years, respectively, to react to the 1978 amendments to OCSLA and the 1988 "valueless material" amendment. And, the Jones Act has not changed in a material and relevant way other than by the 1988 amendment since 1976. CBP would have to offer an explanation why it ignored these statutes in terms of its "vessel equipment" rulings for decades (and the Trades believe, correctly so) and then recently determined that all those rulings are not consistent with those statutes. CBP's statement that the changes in the law "occurred after the issuance of" the 1976 Ruling, to explain its proposed radical departure, rings completely hollow. *See* 2017 Notice at 15.

In addition, CBP states that another basis for compelling the change in policy was the Jones Act provision relating to transportation of merchandise, 46 U.S.C. App. § 883 that was recodified in 2006 at 46 U.S.C. § 55102, requires a change in interpretation of the Jones Act. This is simply dead wrong. This is because the purpose of a recodification is to restate various versions of law for consistency purposes without changing the effect or scope of the law. In other words, these changes do not change the interpretation of the previous law, or impair the precedent value of earlier interpretations. Anyone interpreting the law after a recodification must assume that no change in result was intended. Title 46 Recodification, 2006, Section-by-Section Explanation, pages 23-24.

C. Jones Act Waivers are not a Workable Solution

Supporters of the Notice seem to be trying to downplay the economic harm caused by CBP's policy shift, in part by suggesting that even if the existing Jones Act Fleet cannot perform particular work performed by an NCQV, that the existing Jones Act waiver process can be used to allow an NCQV to perform work. This theory is simply inconsistent with the current law and operationally unworkable.

Jones Act waivers are only available if determined by the DHS Secretary to be "in the interest of national defense," a high standard that in recent history only has been triggered by natural disasters, certain Strategic Petroleum Reserve releases, or requests from the Secretary of Defense based on military necessity. 46 U.S.C § 501. It would indeed be naïve to think that a national defense waiver could be issued for commercial reasons. CBP not only currently lacks any sort of process to grant waivers by letter rulings or otherwise, it also has no waiver authority. Only the DHS Secretary or Secretary of Defense (by making a request to the DHS Secretary) can grant waivers under the National Defense standard. It is also absurd to assume that CBP cannot implement the Notice based simply on the "hope" that Congress might subsequently give CBP more administrative flexibility to mitigate the harm CBP caused to U.S. workers and businesses.

The only other path forward would be for Congress to issue broad waivers or on a case-by-case basis. Again, this is an unworkable solution because the likelihood, scope, and workability of any such legislative relief also creates great uncertainty. This is because offshore energy infrastructure projects require immense investment and years of planning and coordination, therefore energy companies and contractors need certainty and predictability regarding the eligibility of foreign flag assets to work in the United States, rather than having to navigate the vagaries of the legislative process for each project.

D. The 2017 Notice Fails to Clarify Important Other Aspects of the Letter Rulings that May Be Implicated

IMCA and its members are also very concerned that the sweeping proposal by CBP leaves many important questions unanswered, and without much to go on.

For example, the 2017 Notice proposes to revoke, among other Letter Rulings, HQ 105644 (June 7, 1982). Ostensibly, that revocation is limited to any suggestion in HQ 105644 that vessel equipment cannot be defined by reference to the vessel's mission or purpose (in the specific instance, the laying of cable). But HQ 105644 states another very important principle: "The use of the equipment between American ports will have broken the continuity of the transportation between American ports." This totally stands to reason; the use of an item between its port of loading and port of unlading means that its carriage on the vessel was not for purposes of transporting it.

Now consider this principle in light of how items like cement, chemicals, ROVs, transponders and any number of other items are actually used offshore. Chemicals and cement are injected or deposited in various levels of a well and some may be circulated back to the vessel, but CBP is silent on how the Notice would apply in the practical context of well intervention and other operations. Similarly, the implications of the revocation of rulings dealing on ROV operations, which are an indispensable element of any subsea infrastructure project, are left completely unexplained. Furthermore, the Notice raises many questions related to the transportation and installation of pipeline, umbilicals, flowlines, and cable.

Transponders are laid on the sea floor as guideposts for installation procedures. In this they are clearly being "used" for their intended purpose, even though they have been technically unladen at what CBP considers is a coastwise point. If CBP considers transponders to be "merchandise" and not "vessel equipment," it will have to grapple with this principle but the 2017 Notice fails to consider it.

V FATAL LEGAL FLAWS REQUIRE THE 2017 NOTICE TO BE WITHDRAWN

There are substantial legal flaws related to the 2017 Notice that require CBP to withdraw its proposal for reconsideration. In order to move forward with its proposal, CBP must proceed with publication of its proposal in the Federal Register under the Administrative Procedure Act ("APA") for the reasons discussed below.

A. Presidential Executive Orders Require the 2017 Notice to be Withdrawn Immediately

Regardless of the terms used by which CBP to describe the 2017 Notice, in essence it will ultimately have the force of law, ultimately designed to implement, interpret, or prescribe law and policy. Accordingly, the 2017 Notice is clearly subject to Executive Orders 12866 (Regulatory Planning and Review), 13771 (Reducing Regulation and Controlling Regulatory Costs), and 13783 (Promoting Energy Independence and Economic Growth), which set forth White House-led processes for evaluating the economic cost, safety, environmental, and other relevant impacts of new and existing agency rules. In issuing the last two of these orders, the White House underscored the paramount importance of reviewing and eliminating "job killing" regulatory measures that harm U.S. workers, businesses and economic activity. IMCA members include a number of leading U.S. companies, and many contractors with U.S. operations and U.S. workers. IMCA strongly endorses the principle that the CBP's Notice, and any new regulatory initiatives impacting the offshore sector, should not proceed without careful consideration of the impacts on U.S. workers, business, energy and the economic security of the United States

With regard to Executive Order 12866, Regulatory Planning and Review, given the broad economic impact of the Notice on the offshore energy sector as a whole, CBP's action clearly is a "significant regulatory action" under the Executive Order. As a result, CBP cannot lawfully implement its proposal until it completes the cost and benefit assessment required by Executive Order 12866. *See* Section 6(a)(3)(C) of Executive Order 12866. The Notice fails to address or even solicit comments on core issues delineated under this Executive Order.

Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs, was signed on January 30, 2017 by President Trump as one of his initial actions after becoming President. Executive Order 13771 sets an even higher cost-savings barrier for agencies in promulgating new rules. Specifically, Executive Order 13771 requires:

1) unless prohibited by law, whenever an executive department or agency (agency) publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed;

2) for fiscal year 2017, which is in progress, the heads of all agencies are directed that the total incremental cost of all new regulations, including repealed regulations, to be finalized this year shall be no greater than zero, unless otherwise required by law or consistent with advice provided in writing by the Director of the Office of Management and Budget (Director); and

3) in furtherance of the requirement of subsection (a) of this section, any new incremental costs associated with new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs associated with at least two prior regulations. Any agency eliminating existing costs associated with prior regulations under this subsection shall do so in accordance with the Administrative Procedure Act and other applicable law.

Indeed, the 2017 Notice is so ambiguous and confusing it is difficult to comprehend how CBP, the White House, or the regulated industry can fully assess the scope of the future economic costs and harm.

Furthermore, Executive Order 13771 applies to "*all* agency statements of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy" – not just those intended to have the

force and effect of law. It also applies to agency guidance documents, as well as rulemakings, on a case-by-case basis. *See* Memorandum: Interim Guidance Implementing Section 2 of the Executive Order of January 30, 2017, Titled "Reducing Regulation and Controlling Regulatory Costs" (www.whitehouse.gov/the-press-office/2017/02/02/interim-guidance-implementing-section-2-executive-order-january-30-2017). Accordingly, even if CBP asserts that the Notice is nonbinding or does not constitute a new "regulation," despite its profound regulatory effect, CBP cannot simply ignore or circumvent the requirements of Executive Order 13771.

Executive Order 13783, Promoting Energy Independence and Economic Growth, signed March 28, 2017, focuses explicitly on agency actions (which the Notice clearly is) that potentially burden the safe and efficient development of domestic energy resources. If implemented, the Notice would have a catastrophic effect on production of U.S. offshore energy; create significant obstacles and uncertainty for global companies, many with substantial U.S. offices; compromise safety; and immediately impact U.S. jobs and energy markets – all in contravention of Executive Order 13783.

It is well known that development of resources from U.S. offshore sources is a long-term process, requiring billions of dollars to explore, develop, produce, and transport oil and natural gas from offshore. As such, predictability and planning is imperative. It commonly takes a company from 7 to 10 years from the time it purchases a deep water lease to the time that there is first production from the lease. The disincentive and uncertainty that implementation of the Notice would create could lead to shutting down offshore oil and gas production.

Executive Order 13783 mandates that agencies, including CBP, "immediately review" agency actions potentially burdening energy production and prepare and submit a plan to the Director of the Office of Management and Budget within 45 days. Within 120 days, CBP must prepare a draft report detailing the agency actions covered by the Energy EO and make recommendations on how to alleviate of eliminate the burdens to domestic energy production. The report must be finalized in 180 days, with recommendations to suspend, revise, or rescind implemented agency actions as soon as practicable. Given the jarring impact that the Notice would have on domestic production and the economy, it is imperative that any further CBP action be terminated immediately and the Notice withdrawn. To allow this proposal to go forward would be contrary to this Executive Order.

B. CBP Must Follow the Administrative Procedure Act ("APA") Process Should it Decide to Move Forward with its Proposal

From a procedural perspective, should CBP determine that it is appropriate to propose significant changes to almost 40 years of precedent relied on by industry, it must be undertaken pursuant to publication in the Federal Register and the Informal Rulemaking procedures under the APA and not through publication of an interpretive rule in the Customs Bulletin.

CBP incorrectly published the 2017 Notice in accordance with the Interpretive Rulings and Decisions provisions of 19 U.S.C. § 1625. Due to the substantial implications to the offshore industry of any proposed action to modify or revoke sweeping CBP policy and revoke/modify a multitude of rulings under the Jones Act, the 2017 Notice must follow the Informal Rulemaking procedures (commonly referred to as "Notice and Comment" rulemaking) in accordance with 5 U.S.C. §553.[4] CBP previously acknowledged such substantial implications existed in 2009

4 Informal rulemaking must be distinguished from formal rulemaking under the APA. Most agency rulemaking is informal rulemaking published in the Federal Register which must comply with the following minimum procedural requirements: (1) notice of proposed rulemaking, (2) interested parties must be given an opportunity to provide comments, (3) a concise general statement of the basis and purpose must accompany the final rule which must be published at least 30 days before taking effect. *See* generally Jeffery S. Lubbers, A Guide to Federal Agency Rulemaking, 4th Ed. (2006).

and there is nothing that has happened since then to change the analysis of the importance of the potential effect of the 2017 Notice.

As CBP recognized in its revocation of the 2009 Notice, the revocation of a broad swath of ruling letters under its' Section 625 Process is not an appropriate procedure to create all-new forward-looking regulatory mandates for the application of the Jones Act to the offshore sector. Such action is clearly is subject to the *Federal Register* notice and comment rulemaking procedures of the APA.

CBP cannot evade mandatory restraints on agency rulemaking power by relying on its Section 625 Process, which clearly is designed to provide narrow, case-by-case guidance on specific individual Customs transactions.

In this case, the mass revocation of ruling letters is not intended to address a particular single prospective transaction or interested party, rather it is a vehicle for a broad expansion of regulatory prohibitions aimed at the public at large.

Furthermore, the timetable set forth under the *Customs Bulletin* process for the revocation and modification of individual/single rulings is completely inconsistent with the broad scope of CBP's proposed policy changes 19 C.F.R. § 177.12. This section mandates that, "[i]n the absence of extraordinary circumstances, within 30 calendar days after the close of the public comment period, any submitted comments will be considered and a final modifying or revoking notice or notice of other appropriate final action on the proposed modification or revocation will be published in the Customs Bulletin." Given the far-reaching impacts of CBP's proposal, and the breadth and complexity of the legal, economic, operational, safety, and environmental issues implicated by the Notice, a thirty-day agency review and decision making process is fundamentally flawed.

CBP knows how to do this right. As an example, in 2007 CBP proceeded to establish new criteria to determine whether non-coastwise qualified vessels are in violation of the Passenger Vessel Services Act ("PVSA"), which involves the coastwise transportation of passengers. In that case, CBP published its proposed interpretation and solicited comments in the Federal Register. 72 Fed. Reg. 224 (November 21, 2007).

In that APA *Federal Register* Notice, CBP specifically titled its action a "Proposed Interpretation" and stated it was a "Proposed Interpretive Rule." Thus, even though CBP called it an interpretive rule similar to the type of actions it takes under its *Customs Bulletin* procedures, it recognized that like here, the proposed changes were sweeping in nature and constituted broad policy changes which is why the proposal was published in the Federal Register under APA Notice and Comment procedures.

Indeed, CBP's regulatory procedures specifically envision following the APA's Notice and Comment procedures in applicable circumstances when use of the interpretive ruling and publication in the Customs Bulletin would not be appropriate. Specifically, the publication and issuance requirements in the Customs Bulletin are inapplicable to publications made pursuant to other legal authority, including Notice and Comment rulemaking in accordance with the APA under 5 U.S.C. § 553. 19 C.F.R. § 177.12(d).

Accordingly, CBP is well aware that any regulatory actions attempting to impose broad new regulatory requirements for the application of the coastwise laws should be published in the Federal Register, rather than through mass revocations of old rulings under its Section 1625 Process. CBP's attempt to abruptly reverse course on process and revert, with no explanation whatsoever, to a flawed policymaking procedure would clearly constitute arbitrary and capricious behavior under the APA.

In this regard, should CBP decide to move forward with the 2017 Notice under its Section 1625 Process it will face substantial legal impediments under the circumstances surrounding its proposal. Any decision it might render would be treated as an "interpretive rule" which lacks the force of law as outlined by the Supreme Court in 2015 as follows:

> Not all "rules" must be issued through the notice-and-comment process. Section 4(b)(A) of the APA provides that, unless another statute states otherwise, the notice-and-comment requirement "does not apply" to "interpretative rules, general statements of policy, or rules of agency organization, procedure, or practice." 5 U.S.C. § 553(b)(A). The term "interpretative rule," or "interpretive rule," is not further defined by the APA, and its precise meaning is the source of much scholarly and judicial debate. . . . For our purposes, it suffices to say that the critical feature of interpretive rules is that they are "issued by an agency to advise the public of the agency's construction of the statutes and rules which it administers." *Shalala v. Guernsey Memorial Hospital*, 514 U.S. 87, 99, 115 S.Ct. 1232, 131 L.Ed.2d 106 (1995) (internal quotation marks omitted). The absence of a notice-and-comment obligation makes the process of issuing interpretive rules comparatively easier for agencies than issuing legislative rules. <u>But that convenience comes at a price: Interpretive rules "do not have the force and effect of law and are not accorded that weight in the adjudicatory process."</u> *Ibid*.
>
> *Perez v. Mortgage Bankers Ass'n*, 135 S. Ct. 1199 (2015):

Importantly, *Perez* confirms, that non-binding agency interpretations, such as the 2017 Notice, will be subject to judicial challenge and reversal, because this will be considered:

1) a new agency interpretation that rests upon factual findings that contradict those which underlay a long standing prior policy, and

2) the prior Jones Act policy engendered serious reliance interests that must be accounted for. citing *In FCC v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009).

The Supreme Court has held that such statutory interpretations are particularly susceptible to judicial reversal and are not entitled to the same level of agency deference as Notice and Comment rulemaking. Under *Chevron U.S.A. Inc. v. Natural Resources Defense Council*, 467 U.S. 837 (1984), courts in most cases have shown deference to agencies' interpretations of the statutes they administer, if the plain language of the statute is not clear and the agency's interpretation is reasonable enough to be permissible. However, in *United States v. Mead Corp.*, 121 S. Ct. 2164, 2189 (2001), the Court made it clear that *Chevron* deference should only be applied when the agency has articulated its interpretation in a rule created through Notice and Comment rulemaking, an order arising from a formal adjudication, or some other relatively formal procedure arising out of a congressional intent to give the agency the power to speak with the force of law.

Clearly, as a non-binding interpretative rule, the Notice would not clear the bar necessary for CBP to enjoy *Chevron* deference in this case, potentially leaving the agency's proposed reinterpretation of the Jones Act open to nearly *de novo* review by a federal district judge. At best, CBP would enjoy "*Skidmore* deference," a far lower and more flexible standard of case-by-case deference that predated *Chevron*. Under the standard in *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944) deference varies based on thoroughness of the agency's consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and other factors which give it power to persuade.

Accordingly, should CBP decide to pursue this coastwise policy reversal through its Section 1625 Process, there are substantial legal hurdles that it will have to confront should legal challenges result and CBP will be highly susceptible to a court finding that its Notice action warrants little deference and was arbitrary and capricious.

C. <u>Failure to Comply with Informed Compliance Principles</u>

CBP is not meeting its obligation under the Customs Modernization Act to provide clear guidance to the regulated community regarding the Jones Act as related to offshore work. Specifically, Title VI (Customs Modernization

Act) of the North American Free Trade Agreement Implementation Act introduced the concept of informed compliance and shared responsibility. In order to comply with these requirements, the regulated community needs to "be clearly and completely informed of its legal obligations."

To meet its responsibilities, CBP should, for example, clarify what items constitute "equipment" versus "merchandise" in varying contexts, including with respect to multi-purpose vessels, and its legal reasoning therefor. In this regard, the Notice generates more questions than it answers with regard to the day-to-day operations of a NCQV which all raise unique legal and operational issues, which are critical to the offshore energy sector.

In summary, the Notice's approach of revoking longstanding precedent without providing any detailed explanation of the impact and/or interpretation of the changes resulting from such revocations is in direct contravention of its own legal mandates related to "informed compliance" and "shared responsibility." This alone makes its Notice fatally flawed.

D. <u>The 2017 Proposal Raises Serious Conflicts with OCSLA</u>

The 2017 Notice is in direct conflict with the statutory mandate under OCSLA. Specifically, OCSLA requires that operations conducted on the OCS be conducted in a safe manner to prevent or minimize the likelihood of damage or the endangerment of life or health and to protect the environment. 43 U.S.C. § 1332.

Accordingly, under OCSLA CBP is required to take into account safety procedures and environmental risks associated with offshore installation and repair operations and such changes must be implemented in a manner consistent with the Congressional intent and statutory language. Specifically in order to do this, CBP must coordinate with other involved agencies, including the U.S. Coast Guard and Bureau of Safety and Environmental Enforcement ("BSEE"), to consider safety concerns associated with offshore installation and construction operations due to the non-availability of capable Jones Act compliant vessels and the proposed restrictions on foreign-flag vessels, and to ensure the proposed policy is consistent with those offshore safety and environmental regulations already implemented by other federal agencies. *See* 43 U.S.C. § 1347(b) and (f).

Indeed, this constitutes another critical reason why the *Section 1625* process is legally flawed and should CBP decide to further purse this initiative it should purse it through Notice and Comment rulemaking to carry out OCSLA's mandate to take into account these safety and environmental considerations.

In addition, the 2017 Proposal raises the issue as to whether CBP has been interpreting the extension of the Jones Act to the OCS under OCSLA correctly from the very beginning. In this regard, the Jones Act prohibits transportation of merchandise "between points in the United States to which coastwise laws apply." Given the consequence of the determination of the coastwise points in a given scenario and their bearing upon whether these lead to a conclusion that a scenario will give rise to a violation it is of significance that the definition of a coastwise point in law has never been established by the courts.

If CBP now intends to assert that there has been some fundamental flaw in CBP's application of OCSLA over almost half a century, or as is more clearly stated in the General Notice that amendments to OCSLA have resulted in "less consistency" with 46 USC § 55102 it is of vital importance in terms of shared responsibility and informed compliance that the legislative intent of OCSLA be consistently applied to activities undertaken upon the OCS.

Importantly, the definition of a coastwise point has been based upon CBP's own interpretation of the application of OCSLA in over 40 years of rulings rather than a legal test developed in rulemaking or policy development. The 2017 Proposal now makes this ripe for a *de novo* legal challenge in court should CBP decide to move forward with this proposal. CBP has interpreted Section 4(a)(1) to apply to "points" on the U.S. OCS used for the exploration, development and production of seabed mineral resources.

For example, the Jones Act applies to the transportation of merchandise between points in the United States to which the coastwise laws apply. 46 U.S.C. § 55102. The term 'United States' as applied to the coastwise laws, when used in a geographical sense, means the States of the United States, the District of Columbia, Guam, Puerto Rico, the Virgin Islands, American Samoa, the Northern Mariana Islands, and any other territory or possession of the United States." Thus, it appears that for purposes of Title 46, an OCS facility is thus not "within the United States." Under 46 USC § 55101, "the coastwise laws apply to the United States, including the island territories and possessions of the United States…" An OCS facility is thus not a point [or port or place] to which the coastwise laws apply. Accordingly, it is quite possible that a court would find if CBP is challenged that the coastwise laws have not even been extended at all to the OCS by OCSLA.

Moreover, even if OCSLA extended the coastwise laws to the OCS it appears it was limited to platforms and other devices actually attached to the OCS. In this regard, OCSLA states that federal laws are to be applied to activities *on* OCS facilities, not transportation between such facilities. CBP reached a different conclusion only by misquoting this legislative history. In its rulings, CBP substituted the word "or" for the word "on" in interpreting OCSLA: "It is thus clear that Federal law is to be applicable to all activities *or* all devices in contact with the seabed for exploration, development, and production." *See, e.g.,* HQ 115185, (July 17, 2009); HQ 115218 (July 17, 2009). CBP has misquoted this language for decades and appears to have misinterpreted Congresses' intent to only extend federal law to "activities on OCS facilities and not "activities on the OCS" as it has done.

Beyond this, CBP has historically taken a novel approach, erroneously claiming that OCSLA applies the coastwise laws to "points" on the seabed in the "vicinity" of OCS facilities. Incredulously, CBP has relied on a Longshore and Harbor Workers' Compensation Act ("LHWCA") case, *Demette v. Falcon Drilling* 280 F.3d 492 (5th Cir. 2002), for the proposition that the Jones Act applies to points on the seabed in the vicinity of an OCS facility. It defies logic in addition to the statutory intent of OCSLA that CBP erroneously uses the long-discredited "situs" test cited in a body of 5th circuit decisions regarding the LHWCA to assert that the Jones Act applies to the seabed in the "vicinity" of active wells.[5]

In addition to the fact that *Demette* has nothing to do with coastwise trade, no independent support exists for applying the Jones Act to anything other than OCS facilities. Indeed, in the 1978 amendments to OCSLA as discussed above, there is no mention of applying the Jones Act to the subsoil and seabed of the United States. To the contrary, it is limited to artificial islands, and installations and other devices permanently or temporarily attached to the seabed. Moreover, the Supreme Court has overruled the 5th Circuit's use of the "situs test" in LHWCA cases on which the court in *Demette* based its reasoning. These factors should create significant pause when examining regulatory overreach that has resulted from CBP declaring areas of the OCS subject to the coastwise laws where Congress declined to apply them.

VI THE 2017 NOTICE RAISES SIGNIFICANT INTERNATIONAL LAW ISSUES UNDER WORLD TRADE ORGANIZATION ("WTO") AGREEMENTS

Key WTO agreements include certain provisions barring WTO member states' from adopting new measures in the maritime sector that discriminate against or otherwise disadvantage other WTO members. Because the Notice would significantly broaden the reach of the Jones Act, by redefining and reinterpreting key terms and concepts, a strong likelihood that adoption of the changes proposed in the 2017 Notice would be inconsistent with U.S. obligations under the WTO agreements.

5 The *Demette* case stands for the proposition that an injury on the OCS satisfies the *situs* requirements of the LHWCA. In this case, the court noted that the Supreme Court and the Fifth Circuit have held that OCSLA creates a "situs" requirement for the application of OCSLA because it applies to two primary sets of subjects: "to the subsoil and seabed of the [OCS]"; and "to all artificial islands, and all installations and other devices permanently or temporarily attached to the seabed."

Indeed, the potential for action by other WTO member states against the United States in WTO dispute settlement proceedings is an important factor for the Administration to review whether to proceed with the Notice. It is noteworthy that these same sort of WTO-related concerns were in fact a key consideration when CBP decided in 2010 to withdraw an advance notice of proposed rulemaking to make similar changes in the application of the Jones Act to the offshore sector after a similar 2009 CBP proposal was withdrawn in order to initiate a rulemaking under the APA. In addition, the federal courts are likely to look more skeptically on CBP's new, more aggressive reading of the Jones Act because CBP's position raises significant concerns under international law. For these reasons alone, the CBP Notice for should be withdrawn for review and reconsideration of the potential impacts on our international obligations under the WTO agreements.

A. Overview of WTO Agreements

As a brief overview, 1994 Agreement Establishing the World Trade Organization incorporates 60 component agreements and decisions, which together provide a framework of rules under which member countries establish and enforce trade commitments. These agreements include the General Agreement on Tariffs and Trade ("GATT") which was first signed in 1947 and updated in 1994, and the General Agreement on Trade in Services ("GATS"). GATT addresses the sale, movement and use of goods between member states, while GATS addresses trade in services.

A key principle underlying GATT, GATS, and other WTO agreements is nondiscrimination. Two core concepts apply in this area. First is "most-favored-nation" ("MFN") treatment, the principle of treating other members equally. Under the WTO agreements, countries cannot normally discriminate between WTO member trading partners. The second concept is "national treatment," i.e., treating foreigners and locals equally. Imported and locally-produced goods should be treated equally — at least after the foreign goods have entered the market. The same principles applies to foreign and domestic services.

B. GATT 1994 Agreement and its Jones Act Exception

A specially tailored provision excepting the Jones Act from key WTO commitments was added, at U.S. insistence, in Article 3(a) to create an exemption from Part II of the GATT[6]. Part II of the GATT addresses National Treatment, Freedom of Navigation, and other rights. Most importantly, Article III(a) of Part II addresses national treatment which essentially includes a restriction prohibiting a Member to use internal regulations to be applied to imported or domestic products so as to afford protection to domestic production. This Article is relevant to the Jones Act because the U.S.-build requirement in the coastwise laws has the effect of using internal regulations to restrict foreign-built goods (i.e., ships) in a way that affords protection to comparable domestic products. Accordingly, the U.S.-build requirement for coastwise vessels would raise national treatment issues under Article III, if it were not covered by an exception.

The Article 3(a) exception has a key restriction, however: it includes language that indicates that the exception will be lost if the Member's legislation is modified to become more restrictive. It states: "If such legislation is subsequently modified to decrease its conformity with Part II of GATT 1994, it will no longer qualify for coverage under this paragraph."

Accordingly, if CBP adopts the 2017 Notice, it would appear to constitute a modification to the Jones Act in a manner that decreases its conformity with GATT 1994, placing the coverage of the Jones Act exception in Article 3(a) at risk. The 2017 Notice would have the effect of modifying and expanding the definition of what constitutes "merchandise," and therefore what activities are restricted to U.S.-origin vessels under the Jones Act.

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[6] This provision provides for the following: for "measures taken by a Member under specific mandatory legislation, enacted by that Member before it became a contracting party to GATT 1947, that prohibits the use, sale, or lease of foreign-built or foreign-reconstructed vessels in commercial applications between points in national waters or the waters of an exclusive economic zone."

For decades, foreign-built vessels have enjoyed national treatment for a broad range of offshore activities, insofar as they have long been allowed to move equipment and material that the vessel is utilizing for offshore maintenance, construction and repair activities in a nondiscriminatory manner. However, if the new proposed CBP policy is implemented, those vessels would no longer enjoy national treatment when moving equipment and supplies necessary to their offshore mission. Such a change therefore broadens internal regulations to protect domestic production of ships, and therefore decreases the Jones Act's conformity with GATT 1994. This would appear to result in a United States breach of its party obligations under the WTO Agreement.

C. GATS Maritime Services Negotiations and Standstill Clause

In addition, in 1994, Members agreed to convene a special "Negotiating Group on Maritime Transport Services" ("NGMTS") for two additional years to try to improve offers in the maritime area. The agreement to hold the NGMTS talks included a standstill provision barring member countries from imposing new restrictive measures affecting shipping until the negotiations were concluded and implemented[7]. A further standstill agreement was adopted in 1996, which extends to the end of the Doha round of negotiation; that provision remains in effect today.[8]

Accordingly, while there is little precedent on exactly how the standstill is to be interpreted, it is likely that the 2017 Notice, which has the effect of broadening the coastwise laws, would contravene the standstill and thus violate the WTO obligations of the United States.

Importantly, as a result, the Notice is subject to a challenge by other WTO members in a dispute resolution proceeding before the WTO in Geneva. The result of such a proceeding could be countermeasures against other U.S. economic sectors and interests, resulting in potential harm to U.S. business and workers that should be weighed carefully by the United States before finalizing the Notice. This is indeed a significant issue that must be taken into account before further action is taken on this Notice.

VII CONCLUSION

IMCA fully supports the Jones Act. However, there is no reasonable justification why CBP should, after having nine years to consider the authorities and arguments by industry arising from the 2009 Notice, and having admitted in 2009 that the process of interpretive decisions is inappropriate for making sweeping changes to the application of the Jones Act offshore, to once again propose to do the same thing two days before a change in Administrations, particularly during a down turn in activity in the U.S. Gulf of Mexico in a time when the price of oil is struggling, into a flurry of complete and unnecessary uncertainty by issuing the 2017 Notice.

In addition, under applicable Executive Orders, including those recently issued by President Trump, CBP is required to immediately withdraw the 2017 Notice for review and reconsideration.

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[7] That provision stated: Commencing immediately and continuing until the implementation date to be determined under paragraph 4, it is understood that participants shall not apply any measure affecting trade in maritime transport services except in response to measures applied by other countries and with a view to maintaining or improving the freedom of provision of maritime transport services, nor in such a manner as would improve their negotiating position and leverage. Decision on Negotiations on Maritime Transport Services, LT/UR/D-5/5, April 15, 1994.

[8] Section 7 of the Decision on Maritime Transport Services Adopted by the Council for Trade in Services on 28 June 1996, S/L/24, July 3, 1996 stated: 7. Commencing immediately and continuing until the conclusion of the negotiations referred to in paragraph 1 [i.e., the Doha round of comprehensive services negotiations], it is understood that Members shall not apply any measures affecting trade in maritime transport services except in response to measures applied by other countries and with a view to maintaining or improving the freedom of provision of maritime transport services, nor in such a manner as would improve their negotiating position and leverage.

Should CBP decide at some point to move forward with its proposal it should be published in the Federal Register through Notice and Comment rulemaking under the APA, consistent with our comments, and taking into account economic, safety, environmental, and other potential impacts to establish the necessary benchmarks to guide industry in the future. To do otherwise, would constitute arbitrary and capricious conduct, subject to legal challenge.

Yours sincerely

Allen Leatt
Chief Executive

Marine Construction Vessel Impacts of Proposed Modifications and Revocations of Jones Act Letters Related to Offshore Oil and Natural Gas Activities

IMCA
April 4, 2017
Prepared for: CBP
Prepared by/Submitted by: IMCA

The International Marine Contractors Association (IMCA) is the international trade association representing offshore, marine and underwater engineering companies.

IMCA promotes improvements in quality, health, safety, environmental and technical standards through the publication of information notes, codes of practice and by other appropriate means.

Members are self-regulating through the adoption of IMCA guidelines as appropriate. They commit to act as responsible members by following relevant guidelines and being willing to be audited against compliance with them by their clients.

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- Health, Safety, Security & Environment
- Lifting & Rigging
- Marine Policy & Regulatory Affairs

The Association is organised through four distinct divisions, each covering a specific area of members' interests: Diving, Marine, Offshore Survey and Remote Systems & ROV.

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Date	Reason	Revision
April 4, 2017	Initial Issue	1

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Marine Construction Vessel Impacts of Proposed Modifications and Revocations of Jones Act Letters Related to offshore Oil and Natural Gas Activities

IMCA – April 2017

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Executive Summary

IMCA has considered the implications of the CBP notice published on January 18, 2017 and conclusively demonstrated the practical reality that the coastwise approved fleet is unable, on its own, to support the deepwater Gulf of Mexico construction market. This has always been the case and unlikely to change.

Vessels Supporting the Offshore Oil and Gas Exploration and Production Industry

IMCA has analysed the worldwide offshore support vessel (OSV) fleet of over 8,500 vessels and defined a specific set of characteristics of ships technically qualified to be competitive in the deepwater markets.

There are only 528 vessels worldwide in five key categories which are suitable for working in water depths of 3,280 ft/1,000 meters(m) or greater, of which there are only 33 coastwise approved vessels.

Vessel Type	Coastwise Qualified	% Coastwise Qualified	Non-Coastwise	% Non-Coastwise	Total
Light Construction vessels	9	5.5%	156	94.5%	165
Pipelayers	0	0%	55	100%	55
Heavy Lift vessels	0	0%	26	100%	26
Well Intervention vessels	1	8.3%	11	91.7%	12
Seismic survey/geophysical	23	8.5%	247	91.5%	270
Total	**33**	**6.3%**	**495**	**93.7%**	**528**

Breakdown of worldwide deepwater fleet capacity
Source: IMCA analysis of Clarkson Research Services 2016 Worldwide OSV Database dated November 2016

Of the total global deepwater fleet, in 2016 there were only 30 non-coastwise approved vessels active in the GoM and 5 coastwise approved. To put these numbers into perspective, the US has the largest OSV fleet in the world with 1,004 vessels, of which 772 fall into the high volume commodity markets of supply vessels (PSV) and anchor handlers (AHTS); 474 were believed to be active in the GoM in 2016. This is the domain of the US marine services industry, which has clearly prioritized investment in the lower risk commodity sectors where commercial reimbursement is typically based on the dayrate business model.

The deepwater construction market is a completely different business model, with reimbursement typically based upon a fixed price basis, where the contractor is responsible for the complete engineering, project management and offshore execution of the work. This is the domain of large marine contractors based in the US but with their own specialist non-coastwise fleet of vessels and equipment. These ships are of a completely different asset class than the commodity markets, and far most costly to build and operate. They are often purpose built incorporating contractors' own intellectual property for equipment layout and offshore operation. These are niche markets and clearly demonstrated in a comparison of GoM deepwater vessels in 2013 (prior to the industry downturn) and in 2016.

	2016		2013	
Vessel Type	**Coastwise Qualified**	**Non-Coastwise Qualified**	**Coastwise Qualified**	**Non-Coastwise Qualified**
Light Construction vessels	2	18	2	16
Pipelayers	0	7	0	8
Heavy Lift vessels	0	2	0	4
Well Intervention vessels	1	1	0	1
Seismic survey/geophysical	2	2	2	15
Total	**5**	**30**	**4**	**44**

Deepwater Coastwise Qualified and Non-Coastwise Qualified offshore support vessels operating in the US GoM in 2016 and 2013.
Source: IMCA analysis of Clarkson Research Services 2016 Worldwide OSV Database dated November 2016

The data is remarkably constant, with only one significant deviation in the survey and seismic category. The remaining categories are very stable, and emphasise the narrow niches of the market that support the handful of high value deepwater developments that take place each year.

The coastwise fleet cannot meet the needs of the GoM for deepwater construction activities beyond 1,000 meters (3,280 feet). There are no coastwise qualified pipelay vessels, no coastwise qualified heavy lift vessels, and only one coastwise qualified well servicing vessel. Despite plenty of opportunity, historically the coastwise sector has not invested in larger, higher value deepwater capable construction and IRM assets outside of the LCV segment:

- Deepwater construction is a high risk business where work is often conducted on a fixed price basis, unlike the market for PSV and AHT vessels which is a day-rate business.
- In addition to specialised ships, contractors need advanced engineering, project management, procurement, and construction skills to manage large sophisticated projects on a fixed price basis.
- The specialised ships represent very high levels of unit investment, which can range from a lower end of around $200 million to upwards of $1 billion at the higher end.
- This is a world-wide market for the large marine contractors, as no single domestic market can support the levels of investment needed.

Should the proposed CBP modifications and revocations take place, the impact on business in the Gulf of Mexico could be catastrophic, simply because there would be no capacity to install the production facilities offshore. The resulting impact on the whole oilfield supply chain in the USA could cause a collapse in industry confidence and countless job losses onshore and offshore.

A strategy intended to support a limited number of vessel owners could well have enormous unintended consequences for the whole US offshore oil and gas industry.

1 Introduction

On 18 January 2017, the US Customs and Border Protection (CBP) published a notice of proposed modification and revocation of ruling letters related to Customs application of the Jones Act to the transportation of certain merchandise and equipment between coastwise points. This proposal, which could have serious and widespread impact on a variety of industries and the entire US economy, comes nearly eight years after the same Obama administration attempted a similar proposal that was ultimately rejected in response to industry concerns. The purpose of this study is to demonstrate that the same concerns related to fleet capacity remain as of today; and the industry structure, absent of a very large increase in capital investment in specialist shipbuilding, is very unlikely to change going forward.

Something which will rapidly become apparent when reading the report is that despite the very small number of vessels working in the sector, they are essential to deepwater offshore oil and gas exploration and production (E&P). This means that the proposed CBP modifications and revocations only need to impact a tiny number of vessels to result in negative consequences for the entire deepwater E&P market with the potential to seriously impair output and potentially to stop some development activities altogether. This point must be understood, since otherwise it might be easy to conclude that the number of vessels involved is so small that preventing their deployment in areas subject to the Jones Act would not result in significant negative consequences.

This study was conducted to provide a concise but comprehensive overview of both US coastwise-qualified and non-US coastwise-qualified vessels engaged with: cable/umbilical and flexible pipelay, rigid steel pipelay, heavy lift operations, dive and ROV support, well intervention and survey activities. The analysis considers the US coastwise endorsement of the aforementioned vessels, and how the proposed CBP modifications and revocations could affect activities in the Outer Continental Shelf (OCS), the area generally referred to as the US Gulf of Mexico (GoM).

The present report provides:

- Background information on the types of vessels that routinely support the repair, installation and servicing activities on the OCS;
- An analysis of the types, numbers and flag states of offshore support vessels which provide the aforementioned support globally, with a particular emphasis on the US GoM fleet;
- A discussion of the negative impact on the US marine workforce and US industry based on comparative data analysis between the current US coastwise-qualified vessel capacity and non-US coastwise-qualified vessel capacity in the US GoM.

The information provided in this report contains details on the US coastwise qualified and non-US coastwise qualified vessels as described above and a list of conclusions supported by the data. All data is believed to be accurate at the time of collection and/or analysis.

Certain assumptions regarding regionalised vessel allocations have been made, including:

- The vessels included in the following tables and exhibits represent the assessed fleet distribution of both US coastwise-qualified and non-US coastwise-qualified vessels as of November 2016, which is the most recent worldwide database report;
- The report focuses on five market segments relevant to the proposed CBP action: light construction vessels (LCVs), pipelay vessels, heavy lift vessels and crane barges, survey and seismic vessels and well intervention vessels.

This report makes frequent reference to deepwater and the associated technical challenges. As the industry has developed, the definition of deepwater has progressively moved deeper. For instance, in the 1970s this may have been 400ft, and in the 1980s 1,000 ft. Today, the API defines the deepwater contour as 2,000 feet and ultra-deepwater beyond 6,000 feet. The US Energy Information Administration has published material referencing shallow water or continental shelf water depth as up to 125 meters (410 feet), deepwater 125-1,500 meters (410-4,921 feet) and ultra-deepwater as more than 1,500 meters (4,921 feet). In practice, there will be many factors that governing a vessel's water depth capability, not least statutory and class certification rules. This report defines key operational capabilities which are considered to differentiate deepwater capable vessels (generally 1,000 meters or 3,280 feet which is used by many industry commentators) from those which operate in shallower water.

The report opens with an overview of market conditions followed by an introduction to offshore market sectors and business models. These sections are intended to provide sufficient background information to allow those from outside the industry and who are not familiar with offshore operations to better understand the information and arguments presented in the main body of the report.

The body of the report is supported by two appendices:

Appendix 1 - A case study of an actual project to further assist readers to understand the operational implications of the analysis, by demonstrating the real-world impact of the proposed CBP revocations and modifications for an ultra-deepwater GoM project which started in 2016 and is still ongoing.

Appendix 2 – Silhouettes of offshore vessels, in scale, to illustrate the sizes and complexity of the different categories of offshore vessel.

2 Market Conditions

The collapse in oil price from $100/barrel in mid-2014 has had a significant negative affect on the offshore oil and gas industry world-wide, resulting in immeasurable job losses and distress to the whole supply chain. Oil companies reacted swiftly to the collapse by reducing investment and driving costs down. Offshore operating expenditure (OPEX) has been hard hit with all but essential expenditure curtailed, with the supply chain taking the brunt of the cuts. Offshore capital investment expenditure (CAPEX) has collapsed by an unprecedented 50% in the past two years (2015-2016), bringing the industry to an almost standstill in certain markets.

The impact on the offshore marine sector has been particularly hard, and exacerbated by a high level of new vessel building in the preceding 10 years, much of which was financed by debt. Consequently, today we have a gross over-supply situation in every market of the world, where we have seen:

- A collapse in equity values of vessel owners;
- Wide scale asset write-downs;
- Corporate failures;
- A significant proportion of the world's fleet of offshore support vessels laid-up and inactive due to a lack of work.

The GoM is not immune to these realities, despite enjoying record investment in deepwater production in the 10 years prior to the collapse in oil price.

In high level terms, the oil industry has always been cyclical, with an oil price shock every 10 years or so. That said, the current down-turn is analogous to the collapse in the mid-1980s which took 10-15 years to recover. Going forward, some recovery in the market can be expected if the oil price continues to rise, but all will depend upon the industry's cost-base and economic efficiency of competing global oil markets for capital. Should the GoM not remain competitive, market forces will encourage movement of capital to onshore production (shale oil for example) or overseas.

3 Market Sectors

The oil industry comprises many different market sectors. The offshore support vessel (OSV) market is no different, and comprises a range of different vessel types designed to meet the needs of each market segment. In order to put this into context and provide the framework for this report, it is worth considering the typical life cycle of an offshore oil field and the marine assets needed to support each phase. This is shown in Table 1.

Phase	Life Cycle Activity	Vessel Category Requirements
1	Drilling	Drilling rigs, supply vessels, anchor handlers/tugs
2	Construction and installation of offshore production facilities	Pipelay vessels, heavy lift vessels, light construction vessels, survey vessels, supply vessels, tugs, barges
3	Inspection, maintenance and repair of production facilities	Light construction vessels, survey vessels
4	Maintain production and production optimisation	Light construction vessels, drilling rigs, well intervention vessels, supply vessels
5	Plug wells and abandonment	Drilling rigs, well intervention vessels, supply vessels
6	Decommissioning and removal of facilities	Heavy lift vessels, light construction vessels, supply vessels, barges

Table 1 – Life cycle of an oil field and vessel requirements

By far the most common support vessel category requirement is that for supply vessels, often called platform supply vessels or PSVs, and tugs (and combinations thereof) often called anchor handling tug supply vessels (AHTS). They provide all the offshore transport and logistical supply-runs in support of all phases of an offshore production facility. The high-volume markets are in the support of drilling operations and the daily logistical support of offshore production facilities over a 20-30 year lifespan.

Light construction vessels encompass diving vessels and ROV support vessels. Diving support vessels (DSV) can vary from sophisticated purpose-built ships with all-weather deep diving capability (typically diving to 400-1,000 ft) to small anchored ships and barges for shallow diving activity (typically 100-200 ft). Likewise, remotely operated vehicle (ROV) support vessels can vary in configuration, but all deploy sophisticated robotic vehicles and tools in deep water well beyond diving range (and typically up to 10,000 ft). Light construction vessels typically have small to medium sized cranes on board (typically 100-250 tons) for supporting diver or ROV construction intervention activities.

There are many forms of drilling rigs today, from deepwater drill ships, to midwater semi-submersible rigs, to shallow water jack-up rigs. They are often generically referred to as mobile offshore drilling units (MODU) and all are equipped with a high level of equipment inventory to support drilling operations.

Well intervention vessels provide intervention into a live well for maintenance operations when the full capability of a drilling rig is not warranted. It is a specialised operation with a limited number of such vessels in operation world-wide.

Heavy lift vessels are used for installing the very heaviest of loads (between 1,000 to 10,000 tons) comprising offshore platforms, decks, etc. It is a highly specialised market with a limited number of deepwater capable vessels world-wide.

Pipelay vessels vary considerably in configuration depending upon the technology they deploy for laying pipelines on the seabed. The market has developed greatly over the past 30-40 years from the early generation of anchored barges to highly sophisticated units today for successfully laying rigid steel pipelines in deep and ultra-deep water. An adjacent market to rigid steel pipelaying is that of laying pipelines manufactured from flexible materials, the so called flexible flowlines, which are a competing product for rigid steel pipelines and risers. These vessels are configured with heavy duty storage facilities for thousands of tons of flexible products and sophisticated equipment for handling and laying the product on the seabed. These vessels are also used for laying umbilicals and cables which provide the power and telemetry systems for remotely controlling production wellheads on the seafloor. The vessels are normally configured with cranes (300-500 tons) for installing the associated production hardware on the seabed.

Survey vessels comprise a range of sub-categories from seismic surveying activities to hydrographic surveying. Seismic is in support of exploration and mapping of oil and gas reservoirs, whereas hydrographic surveying is largely associated with topographical surveys of the seafloor providing design data for subsea structures, pipelines, etc.

A common feature of modern tonnage today has been the shift away from traditional means of position keeping on location offshore. Traditionally this was with an anchor mooring system, but has now been almost completely replaced with dynamic positioning (DP). This system uses computer based technology to navigate and control the ship's thrusters and propellers to maintain accurate position. The technology has been developed massively over the past 30 years and deploys a multitude of technology including satellite, sonar and microwave navigation systems. However, there are various classes of DP system, which use a numbering system DP1, 2 and 3 to differentiate between vessels with higher levels of equipment redundancy and resilience, DP3 being the most sophisticated, and DP1 being viewed as quite limited today.

4 Offshore Business Models

When considering fleet capacity in the offshore sector it is important to have some understanding of the different business models used by the industry, and that the model varies according to the market sector. The most prevalent model is a day rate reimbursement mechanism based on prevailing market conditions. Oil companies charter tonnage either on a term basis or spot market basis, or a combination the two to suit their business needs. It is therefore a relatively low risk business model, provided there is adequate vessel utilization, and has a low overhead burden.

There is plenty of scope for technical differentiation in the drilling and well servicing sectors, but little technical differentiation in the supply vessel and AHTS sectors beyond cargo capacity and bollard pull. Pricing in these commodity sectors is largely driven by the spot market. The supply vessel and AHTS markets are the domain of the marine service providers, which are often companies with large fleets of vessels operating in domestic and international markets.

By contrast, the business model in the construction and decommissioning sectors is completely different and based on a fixed price contracting mechanism. It is therefore a high risk business with potentially higher returns, but is not one for the faint hearted, as the risks are wide-ranging, including operational performance risks, weather risks, procurement risks, etc. It is the domain of international marine contractors who engineer, design, build and install offshore production facilities on a world-wide basis. They normally own or at least control their vessels and installation equipment; this is because the assets are highly specialised for deepwater activities and incorporate their own intellectual property. The market is truly international in nature because no single domestic market can support the level of investment – which is the case in the GoM. The business model is therefore much more sophisticated than the chartering model, as contractors not only have to lay pipelines and construct production facilities offshore in extreme water depths, but also need the engineering, project management and procurement capabilities in order to integrate the activities successfully on a fixed price basis.

5 Methodology

Clarkson Research Services Ltd is an internationally recognised provider of marine services with a global presence, including Clarksons Platou Shipping Services USA LLC. They maintain an updated list of offshore support vessels worldwide, this list is an industry recognised resource and includes data from the near real-time ship tracking system ShipAIS, which is an automatic identification system of commercial shipping. As part of this study, IMCA accessed and reviewed Clarkson's 2016 database edition of A-Z of *Offshore Support Vessels of the World*. The 2016 database contains 8,610 vessels operating internationally. As part of the analysis a number of vessel types that were not considered relevant to the scope of the CBP's proposed modification and revocation of rulings were eliminated, including dredgers, shuttle tankers, offshore production vessels, offshore supply vessels, and similar vessel categories. IMCA recognises and accepts that vessels transporting merchandise and/or passengers are within the scope of the Jones Act. Therefore, this report does not consider those vessel types.

The screening process identified a list of 1,818 vessels in seven key vessel classes. The seven vessel classes were then consolidated into five construction sector categories in order to simplify the presentation, this involved combining several vessel classes into a single category.

A final screening identified vessels in the five categories suitable for deepwater operations and resulted in a list of 528 deepwater capable vessels. The consolidation was conducted as follows:

- Light construction vessels (LCVs) include the sub-categories of dive and ROV support, and multi-purpose support vessels;
- Pipelayers include the sub-categories of cable, umbilical, and flexible pipelay, and rigid steel pipelay;
- Heavy lift vessels include the sub-categories of crane vessels and transportation/heavy lift – note that some of these vessels are also capable of laying pipe;
- Survey vessels include the sub-categories of hydrographic/oceanographic and seismic/geophysical vessels;
- Well intervention vessels include the sub-categories of multi-purpose support, multi-role, and other support where they are configured as well intervention vessels.

The report provides a gap analysis between the US and foreign fleet capacity to support the offshore oil and gas exploration and production industry in the US. For this reason, the scope of this report primarily focuses on the aforementioned vessel types, and narrowing them down to those which are able to operate in deepwater environments. Industry experience shows that the US coastwise qualified fleet is able to support shallow water offshore oil and gas operations in the OCS.[1] In contrast, this report shows the practical reality that the US coastwise qualified fleet is unable to support deepwater offshore oil and gas operations in the OCS.

Supplementary sources of information include the following reports by Clarkson Research Services Ltd:

- Offshore Review and Outlook North America (*October 2016*);
- Offshore Review and Outlook (*October 2016*); and,
- Regional Outlook North America (*November 2016*).

1 Coastwise is a specific endorsement issued by the US Coast Guard. To receive a coastwise endorsement, vessels must be built in the US with a majority of US products, owned by a US company and registered in the US. Only vessels with coastwise endorsement are allowed to engage in coastwise trade.

As part of this study, IMCA accessed and reviewed Clarkson's 2016 database and used it as a cross-reference to distinguish coastwise qualified vessels and non-coastwise qualified vessels.

There is a crucial difference between US flag and US-coastwise qualified; a vessel may be flagged to the US registry but not satisfy the requirements to be coastwise qualified (see section 6.2). This is usually because the vessel was not constructed in a US shipyard or fails to meet Jones Act ownership criteria. Section 7 of this report identifies coastwise qualified vessels, as opposed to simply being US registered.

Vessel requirements were developed based on discussions with marine contractors and vessel captains, literature reviews, and industry commentaries.

6 Vessels Supporting the Offshore Oil and Gas Exploration and Production Industry

6.1 International Overview

The offshore oil and gas exploration and production (E&P) industry is dependent on the support of numerous types of specialised support vessels. Worldwide, there is a fleet of over 8,500 vessels that support various aspects of offshore operations.[2] Table 2 depicts the fleet capacity of major flag states regarding offshore support vessels (OSVs). The US OSV fleet is the largest in the world with almost 50% more registered vessels than the next largest fleet (1,004 US flag vessels to Singapore's 678).

Rank	Country	Vessel #	Rank	Country	Vessel #
1	United States	1,004	15	India	187
2	Singapore	678	16	Russia	185
3	Panama	555	17	UAE	169
4	China	432	18	Bahamas	164
5	Malaysia	360	19	Netherlands	159
6	Vanuatu	308	20	Norwegian International	154
7	Norway	280	21	Cyprus	110
8	Mexico	263	22	Bahrain	98
9	Indonesia	251	23	Liberia	88
10	St Vincent & Grenadines	241	24	Azerbaijan	85
11	Brazil	211	25	Italy	82
12	Nigeria	198	26	Danish International	77
13	Marshall Islands	188		*Others*	1895
14	United Kingdom	188		**Total**	**8,610**

Data source: Clarksons Research

Table 2 – OSV fleet capacity of major flag states worldwide (November 2016)

Of those vessels, there is a subset of 1,817 vessels (21% of the total of 8,610) that are capable of providing construction, repair and inspection (such as heavy lifting, installing pipe) in support of the oil and gas E&P industry. Of this subset, approximately 10% are US flag, see Table 3.

2 Offshore Review and Outlook North America, Clarksons Research, October 2016.

Type	US	% US	Non-US	% Non-US	Total
Dive/ROV support vessels	18	12%	129	88%	147
Pipe/cable lay vessels	24	9%	230	91%	254
Crane and derrick lay barges	34	12%	240	88%	274
Heavy lift vessels	1	1%	93	99%	94
Multipurpose support	18	6%	300	94%	318
Well stimulation vessels	8	27%	22	73%	30
Survey vessels	81	12%	620	88%	701
Total	**184**	**10%**	**1,634**	**90%**	**1,818**

Table 3 – Breakdown of overall OSV fleet capacity worldwide (November 2016).
Within this subset, there is a further, much smaller subset of vessels suitable for deepwater operations

To simplify the presentation, these seven vessel types were consolidated into the five categories defined in section 5 of this report. Their technical capabilities to allow operation in deepwater are defined in Section 7. After this consolidation and screening process to identify the deepwater capable fleet, a list of 528 vessels remains. This is shown in Table 4. The report concentrates on this small fleet of deepwater capable offshore vessels and separates them into coastwise and non-coastwise qualified.

Type	Coastwise qualified	% Coastwise qualified	Non-coastwise qualified	% Non-coastwise qualified	Total
Light construction vessels	9	5.5%	156	94.5%	165
Pipelayers	0	0%	55	100%	55
Heavy lift vessels	0	0%	26	100%	26
Well intervention vessels	1	8.3%	11	91.7%	12
Seismic survey/geophysical	23	8.5%	247	91.5%	270
Total	**33**	**6.3%**	**495**	**93.7%**	**528**

Table 4 – Breakdown of worldwide deepwater fleet capacity

This small group of highly capable vessels represents approximately 6% of the global OSV fleet. If only looking at pipelayers, heavy lift and well intervention vessels then the global fleet of deepwater vessels is less than 100, just 1% of the global OSV fleet. This small number of vessels are essential for deepwater oil and gas operations and, put simply, developing deepwater fields would not be possible without them. To put these numbers into perspective, in the high volume commodity sector there are currently believed to be a combined total of 5,535 PSV and AHTS vessels in the global fleet, of which 772 are US flag and of which 474 were believed to be active in the US GoM in November 2016 (excluding vessels in long term lay up).[3]

[3] Regional Outlook North America (November 2016).

6.2 US Overview

Out of a US flag OSV fleet of 1,004 vessels, 820 vessels, or 82% of the total, fall into the high-volume commodity types such as platform supply vessels, anchor handlers (AHTS) and crew boats. There are 184 US flag OSVs capable of providing construction, repair and inspection (such as heavy lifting, installing pipe) in support of the oil and gas E&P industry. But there are just 33 coastwise qualified deepwater capable vessels in the five deepwater categories analysed in section 7 of this report, or 3.6% of the US flag OSV fleet, most of which are survey vessels.

It is very clear that the US flag OSV fleet is focused on the commodity and shallow water markets, and largely absent in the high cost deepwater markets.

The OSV business in the US is dominated by US flagged, coastwise qualified vessels. This results from the fact that, with limited exceptions, US laws reserve the privilege of conducting 'coastwise trade' to vessels meeting the criteria for coastwise qualification, which include requirements that vessels are built and documented in the US, crewed with US citizens and owned by US nationals. Similarly, only US documented vessels with a coastwise trade endorsement may engage in towing or carrying passengers between ports or places in the US.

Section 4(a) of the Outer Continental Shelf Lands Act of 1953, as amended (OCSLA), extended the coastwise laws of the US to:

> "*the subsoil and seabed of the outer Continental Shelf and to all artificial islands, and all installations and other devices permanently or temporarily attached to the seabed, which may be erected thereon for the purpose of exploring for, developing, or producing resources therefrom … to the same extent as if the outer Continental Shelf were an area of exclusive Federal jurisdiction within a State.*"

The 1978 amendments to OCSLA added the language above concerning attachment to the seabed of installations and other devices. CBP has interpreted this language to mean that only US-coastwise qualified vessels (i.e. US build, owned, manned and documented) can:

- carry cargo between shore and an offshore MODU, platform, or other fixed or floating facility while temporarily or permanently attached to the seabed;
- carry cargo between two such offshore locations (or points);
- carry passengers from shore to an offshore MODU, platform, or other fixed or floating facility while temporarily or permanently attached to the seabed;
- carry passengers between two such locations;
- engage in towing between shore and an offshore MODU, platform, or other fixed or floating facility while temporarily or permanently attached to the seabed; or
- engage in towing between two such offshore locations.

For example, CBP applies the Jones Act applies to anchor handling tug supply vessels (AHTSs) and PSVs supplying offshore vessels, structures or installations captured by Section 4(a) of OCSLA as stated above.

The vast majority of the US flag OSV fleet will not be affected by the proposed ruling revocations as they fall into categories which are reserved for coastwise qualified vessels such as transporting supplies and offshore workers. The number of coastwise qualified deepwater vessels is very small in the context of overall fleet numbers.

6.3 Offshore Activities in Deepwater Environment

Offshore oil and gas exploration and production in deepwater is technically challenging, and is associated with highly demanding requirements for dynamic positioning, lifting capacity and other vessel industrial systems.

These and other factors will dictate the physical characteristics of a vessel, such as displacement and hull form. Similarly, the technical characteristics of cranes and other lifting appliances used in deepwater environments are strictly defined which necessitate 'purpose built' specificity to meet innovative performance criteria.

Dynamic positioning allows a ship to accurately and automatically control its position and heading, including remaining stationary using a system of computers, position references, propellers and thrusters. In shallower water it is possible to use anchors or spud cans to control the position of a vessel, however this is not practical in deepwater. There are three classes of dynamic positioning, many deepwater offshore vessels require DP systems meeting the more demanding requirements of DP equipment classes 2 or 3 to provide more dependable positioning. The requirements for these equipment classes are provided in International Maritime Organization (IMO) guidelines (MSC/Circ.645).

Many of the vessels under consideration need ship mounted cranes. These cranes are not the same as the small cranes installed on board PSVs for handling stores and spare parts, or even larger cranes installed on board conventional cargo carrying vessels such as bulk carriers or crane equipped container vessels. The cranes required for deepwater capable OSVs include the largest cranes in the world, and even the smaller examples used on LCVs and survey vessels have a high lifting capacity relative to most marine cranes, and have high wire capacity and sophisticated control systems to lower items to deep depths.

Using a crane for tasks outside its design intent significantly increases safety risks, equipment failures and downtime. The intended use of the crane includes shipboard lifts, subsea construction, the installation and retrieval of loads on the seabed, remotely operated vehicle (ROV) support, supply vessel operations, vessel to vessel lifts, vessel to platform lifts and personnel lifting.

In addition to requirements for the lifting equipment itself, the hull of the vessel must be suitable, and must have adequate stability for the intended operations, while satisfying international stability regulations as enforced by the USCG in the US.

The result of these factors is that the vessels considered in this report will tend to be much larger, be provided with greater installed power and have larger, more capable mission systems than vessels designed to perform similar activities in shallow water or which are restricted to near coastal and inshore operations. This means they are much more expensive to build and operate. They also need highly specialised technical expertise if they are to be safely operated; only a limited number of companies in the world currently possess the necessary technical expertise, hence the small number of such vessels.

6.4 Oil Production in the US Gulf of Mexico

According to the US Energy Information Administration, average daily consumption of oil in the United States in 2016 was 19.4 million barrels per day (MB/d). Domestic oil production was 8.9 MB/d. Production from the Gulf of Mexico was approximately 1.6 MB/d of oil (excluding gas

equivalent to oil) representing around 17-18% of domestic production. Offshore oil production is much more expensive than onshore production and globally represents approximately 30% of the world's oil production.

Offshore oil production volumes in the US GoM are enjoying something of a renaissance, the weaker oil price environment notwithstanding. In 2014, offshore oil production in the area increased year on year for the first time since 2002. The revival of offshore production can be substantially attributed to the advent of deepwater and ultra-deepwater E&P activity in the last decade: the US GoM has been one of the foremost areas for deepwater E&P spending and innovation globally.[4] The health of the US GoM and fulfilment of these expectations depends on continued availability of deepwater capable OSVs. As highlighted in section 6.1, a very small number of deepwater capable vessels are essential for continued deepwater activity in the region. Section 7 of this report demonstrates that there will be insufficient vessel capacity to service these deepwater activities if non-coastwise qualified vessels are excluded from the GoM.

6.5 Employment of American Workers Employed Onboard Offshore Vessels in the US Gulf of Mexico

The GoM provides a wealth of marine and offshore employment opportunities for US citizens. From welders to caterers, from chief engineers to deck hands and commercial divers to ROV pilots, the GoM offers opportunities for people with a wide and diverse range of skills and talents. In the current downturn however, there is a surplus of American seafarers and resulting unemployment.

The present poor market conditions may superficially make measures intended to exclude non-coastwise vessels seem an attractive means of boosting employment for US seafarers. However, the surest way to provide long term job opportunities for seafarers is for the industry to return to good health and for the market to grow. The small fleet of non-coastwise qualified vessels offer opportunities for US workers offshore, a survey of twelve Contractor members of IMCA conducted in February 2017 found that these companies had more than 1,100 US workers offshore.

It must also be recognised that marine contractors have substantial investments in the US and a long heritage of pioneering commitment to the GoM. They have significant onshore operations with extensive engineering, management, production, and fabrication facilities throughout the Gulf Coast States, and employ many thousands of US workers onshore. Banning their construction vessels from the market through the proposed CBP modifications and revocations will cost jobs rather than create jobs. Onshore, the GoM market is supported by a vast range of industrial infrastructure and suppliers representing a huge supply chain of activities. These businesses employ many tens of thousands of American workers and are dependent on continued investment offshore – which is at risk through the proposed CBP modifications and revocations.

4 ibid.

7 US Fleet Capacity for Offshore Support Vessels Operating in Deepwater Environments

7.1 General Overview

Offshore oil and gas exploration and production in deepwater environments is technically challenging, and is associated with more demanding functionality such as dynamic positioning, increased lifting capacity and other complex vessel industrial systems (section 6.3). This section provides information about the five categories of vessel considered suitable for operating in water depths of 3,280 ft/1,000 meters(m) or greater, summarized in Figure 1.

To assist readers in appreciating the different sizes of the vessels considered in this section, a selection of vessel silhouettes is provided in Appendix 2.

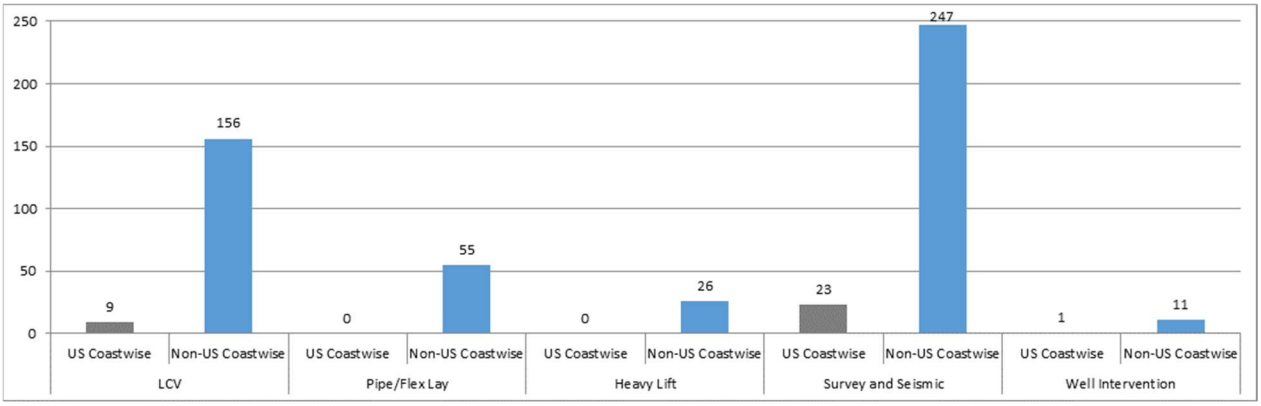

Figure 1 – Worldwide breakdown of deepwater OSV types (528 vessels)

7.2 Light Construction Vessels (LCVs)

This category includes a number of vessel types, including those that conduct the light and medium construction activities in the support of the installation of offshore oil and gas platforms, pipelines and related facilities.

LCVs are often configurable for a wide range of potential activities and can be mobilised with different mission equipment according to the needs of the contractor. Although in the last 20 years there has been an increasing move to specialization in this sector. This category includes vessels which are capable of supporting manned and/or remotely operated vehicle (ROV) diving.

The basic requirements[5] for a light construction vessel include:

- Station keeping of DP2 or greater;
- Minimum of 100T crane capacity in single fall mode[6];
- Minimum crane working depth of 1,000 meters.

Although many LCVs look like enlarged platform supply vessels, they are provided with accommodation and appropriate certification for carrying industrial workers, power supplies capable of feeding mobilised equipment and will be provided with a crane capable of supporting construction and deploying systems and equipment overboard. A typical LCV, the *Grand Canyon II*

5 Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews. Individual construction companies may apply different criteria based on their own preferences or specific circumstances.

6 For subsea work, it is highly advisable to avoid multi-fall arrangements due to the likelihood of spinning and fouling.

of Helix Energy Solutions Group Inc, is illustrated in Figure 2 alongside the same company's semi-submersible well intervention vessel *Q5000*.

Figure 2 – LCV Grand Canyon II *(left) and Helix well intervention vessel* Q5000

LCVs suitable for supporting their intended activities in water depths of 3,280ft/1,000m or greater will be equipped with minimum of 100T crane capacity and 3,280ft/1,000m wire[7].

The currently available number of US coastwise and non-US coastwise LCVs with a crane capacity of >100T and >1000m wire is highlighted graphically in Figure 3.

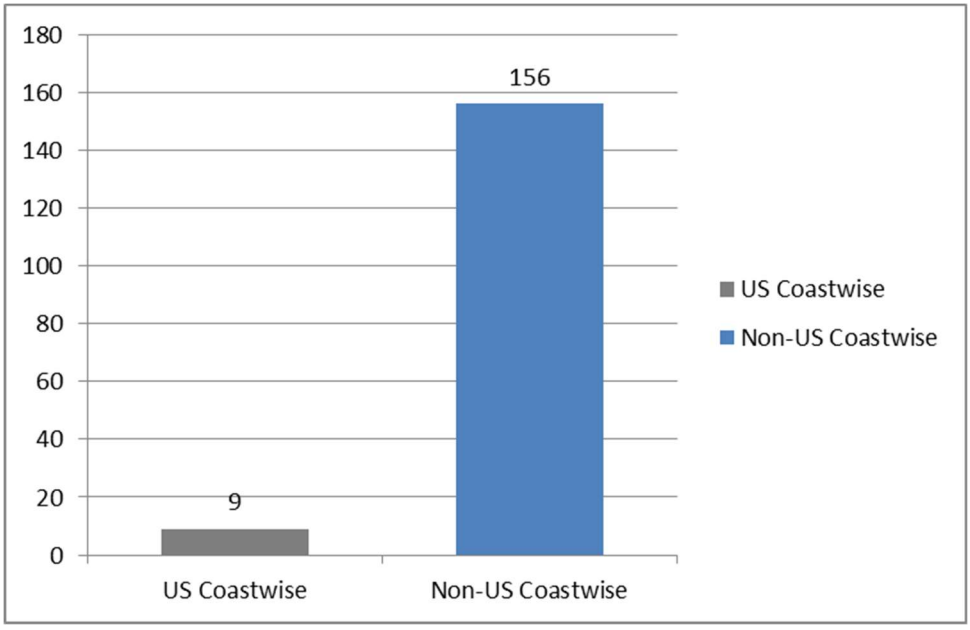

Figure 3 – Worldwide breakdown of deepwater capable light and medium construction vessels (>100T crane capacity; >1000m wire)

[7] Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews. Individual construction companies may apply different criteria based on their own preferences or specific circumstances.

Of the nine coastwise qualified LCVs meeting the criteria used to define deepwater capability, six are equipped with a crane of 150T or greater capacity which is considered the industry accepted minimum capacity for deepwater lifts.[8] These vessels are shown in Table 5.

Name	Owner	DP Class	LOA (m)	Beam (m)	Crane SF (mT)	Max Working Depth (m)
HOS Warland	Hornbeck Offshore	DP2	92	23	250	3700
HOS Woodland	Hornbeck Offshore	DP2	92	23	250	3700
Harvey Deep-Sea	Harvey Gulf	DP2	92	20	165	3000
Harvey Intervention	Harvey Gulf	DP2	92	20	165	3000
C-Installer	ECO	DP2	97	20	150	3000
Ocean Alliance	Oceaneering	DP2	94	20	150	3000

Table 5 – US-coastwise LCVs suitable for deepwater lifts

IMCA is aware that there are small number of additional coastwise new build projects underway. The inclusion of these vessels does not provide any meaningful new capacity, or do anything to close the capability gap.

A significant complicating factor is that offshore marine construction is undertaken by marine contractors – not marine service providers. It would challenge normal economic and industrial logic to expect contractors, with all the operational risks they shoulder, to bankroll marine service providers while somehow redeploying or stacking their own vessels. This would be a significant backward move to an earlier era which was not sustainable in the 1980's, let alone today. Our industry has a long history of integrating important parts of the supply chain in order to manage risk, and it is unrealistic to now start to disaggregate the industry's structure.

7.3 Pipelayers

This category includes a number of vessels that support the installation of rigid steel pipelines and flexible pipelines. There are several methods in use for laying pipe, principally:

- J-Lay – used to install rigid pipelines in deep water. Pipe is upended and welded to the seagoing pipe in a near vertical ramp or tower, the angle of which is adjusted so that it is in line with the pipe catenary to the seabed. This method minimises pipe bending.
- S-Lay – pipe joints are welded together onboard the vessel in a horizontal production line, a stinger supports the pipe as it leaves the vessel to control the radius as it bends towards the seabed. This method offers a high rate of laying pipes and is mainly found in shallow to intermediate water depths although the method can also be used in deepwater.
- Reel Lay – long pipe segments are welded, tested and coated onshore and then spooled onto a large, usually vertically oriented pipe reel, in one continuous length. Once the reel-lay vessel is offshore, the pipe is unspooled, straightened and then lowered to the seabed as the vessel moves forward. This offers a high production rate and high quality assurance as the welds and quality are checked onshore before loading. A fabrication spool base is required onshore.

8 Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews. Individual construction companies may apply different criteria based on their own preferences or specific circumstances.

- Flex Lay – uses a vertical tower, equipped with one or more tensioners, and a chute or wheel aligner on top to install flexible pipelines. The installed pipeline is less sensitive to fatigue and requires less complex installation, abandonment and recovery procedures.

Some pipelayers can operate in several of the above modes, offering a multi-lay capability which optimizes the lay system used according to specific requirements. Pipelayers may be very large vessels and are often provided with large cranes to undertake construction activities when not laying pipe. Figure 4 shows the pipelayer *Seven Oceans* laying pipe using a reel lay system; Figure 5 shows the same vessel at a fabrication spool base. To demonstrate how large some pipelay vessels are, Figure 6 shows the Allseas vessel *Solitaire*.

Figure 4 – Subsea 7's Seven Oceans *pipelay vessel*

Figure 5 – Seven Oceans *alongside at the Subsea 7 Port Isabel, Texas fabrication spool base*

Figure 6 – The large deepwater pipelay vessel *Solitaire* at sea

Pipelayers suitable for deepwater operation[9] will be provided with:

- Station keeping of DP2 or greater;
- Minimum of 100T top tension;
- Minimum of 1,000T pipe carrying capacity.

At present, there are no US-coastwise qualified pipelay vessels believed to be provided with either dynamic positioning and/or this minimum pipe tension, thereby severely limiting their ability to serve deepwater fields in US waters. Dynamic positioning is essential as in deepwater; as it is not practical to use anchors for positioning. If operating in deepwater and ultra-deepwater pipe tension capabilities of 100T and greater are typically required.

Non-US coastwise qualified assets dominate the deepwater pipelay sector. These assets have long been a staple in the development of offshore oil and gas field development projects and have an unparalleled track record of safe, environmentally friendly operations. This is the result of many years of highly skilled asset management, design expertise and leveraging experiences gained from global operations.

Figure 7 provides the numbers of coastwise and non-coastwise qualified pipelay vessels meeting the specified criteria for deepwater operation.

[9] Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews. Individual companies may apply different criteria based on their own preferences or specific circumstances.

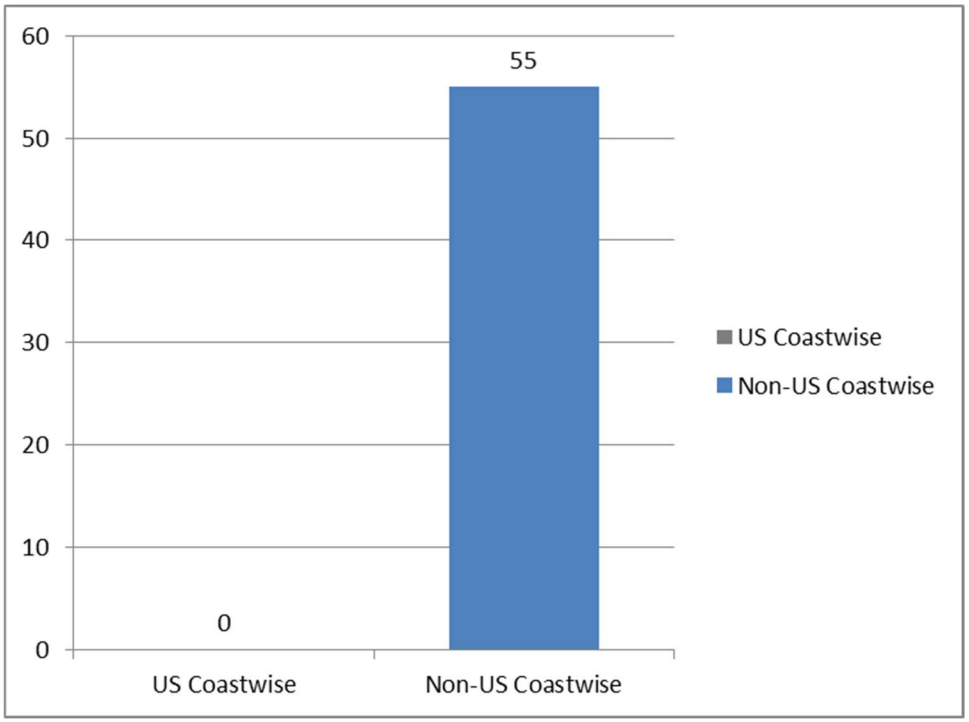

Figure 7 – Worldwide breakdown of pipelay vessels capable of deepwater operations; meeting the minimum requirements

Table 6 lists the known coastwise pipelaying fleet. All of these vessels are designed for shallow water operations, less than 984ft/300m, utilising anchors or spud cans to maintain vessel position.

Name	Operator	DP	LOA (m)	Beam (m)	Top Tension (>100mT)	Flag	Coastwise
Rider	Everest Hill	Anchor	79	22	UNK	US	Y
Brave	Cal Dive Intl	Anchor	84	21	UNK	US	Y
Pecos	Cal Dive Intl	UNK	78	22	UNK	US	Y
CLB Big Max	Mobro	Anchor	79	22	UNK	US	Y
CM9	Chet Morrison	Anchor	55	16	18	US	Y
Diamond 85	Diamond Services	Anchor	66	21	UNK	US	Y
Diamond Jim	Diamond Services	Anchor	53	23	UNK	US	Y
DLB Super Chief	Bisso Marine	Anchor	81	22	45	US	Y
Midnight Runner	Torch Inc	Spud	46	16	14	US	Y
Mighty Chief	Bisso Marine	Anchor	60	23	23	US	Y

Table 6 – US-coastwise qualified pipelay fleet

7.4 Heavy Lift Vessels

This category includes various self-propelled and non-self-propelled heavy lift vessels. These vessels are used for lifting large loads into position offshore. For the purposes of this report a heavy lift vessel is considered one provided with a crane of at least 1,000T lifting capacity. Smaller lifts may be performed by LCVs (see section 7.2) or smaller lift vessels.

Heavy lift vessels may take many forms, including both semi-submersible and conventional ship-shaped hull forms.

A large semi-submersible heavy lift vessel is shown in Figure 8 and a more conventional ship-shaped vessel shown in Figure 9.

Figure 8 – Large semi-submersible heavy lift vessel

Figure 9 – Large conventional ship shape heavy lift vessel

The basic requirements[10] for a deepwater heavy lift vessel include:

- Station keeping of DP2 or greater;
- Minimum of 1,000T crane capacity;
- Minimum of 200ft hook height;
- Minimum of 100ft working radius.

The discrepancy between the coastwise qualified and non-coastwise qualified fleet is readily apparent in this crucial heavy lift segment.

Figure 10 shows the coastwise and non-coastwise qualified heavy lift fleet satisfying the above criteria for deepwater heavy lifting.

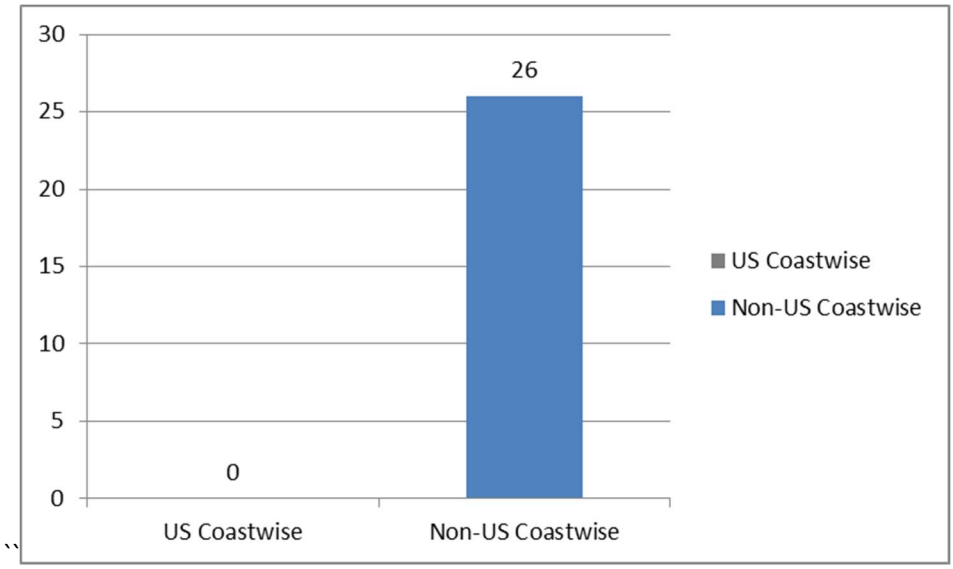

Figure 10 – Worldwide breakdown of coastwise and non-coastwise qualified deepwater heavy lift vessels

10 Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews.

Table 7 lists some of the larger coastwise qualified heavy lift vessels and their capabilities (this is not a complete list).

Type	Name	Owner	LOA (m)	Beam (m)	DP	Crane Max Load (>1000mT)
Heavy lift crane	VB 10000	Versabar	85	96	DP3	6,800
Heavy lift crane	EP Paup	Manson Construction	116	32	Anchor	907
Heavy lift crane	Chesapeake 1000	Donjon Marine Co	58	31	Anchor	907
Heavy lift crane	Mr Two Hooks	Laredo Construction	64	21	Anchor/Spud	800
Heavy lift crane	Tetra Arapaho	TETRA Tech	107	31	Anchor	726
Heavy lift crane	DB General	General Construction	91	30	Anchor/Spud	700
Heavy lift crane	Cappy Bisso	Bisso Marine	61	21	Anchor/Spud	635
Heavy lift crane	Lili Bisso	Bisso Marine	59	22	Anchor/Spud	544
Heavy lift crane	Illuminator	Laredon Construction	55	21	Anchor/Spud	513
Heavy lift crane	Wotan	Manson Construction	91	27	Anchor/Spud	454
Heavy lift crane	Derrick No 24	Manson Construction	61	26	Anchor/Spud	400

Table 7 – Sample of US coastwise qualified heavy lift vessels and their capabilities

The only US-coastwise heavy lift vessel which meets the 1,000T lifting capacity and dynamic positioning requirements is the *VB 10000*. However, this vessel does not fulfil the minimum of 200ft hook height and as it is not a slewing crane, and is not used for platform jacket installations. The remaining 10 US heavy lift barges are positioned utilising anchors/spud cans and designed for shallow waters. As such, there are no coastwise heavy lift vessels which meet the defined criteria.

7.5 Well Intervention Vessels

These specialised vessels perform operations on an oil or gas well during its life to increase production efficiency, provide well diagnostics and support well abandonment activities. The intervention is accomplished through the use of riser and riserless technologies. A semi-submersible well-intervention vessel is shown in Figure 2 (Section 7.2).

The basic requirements for a deepwater well-intervention vessel include[11]:

- Station keeping of DP2 or better – the USCG recommends DP3;
- Minimum of 350T tower for riser based intervention;
- Minimum of 150T tower/crane for riserless intervention;
- MODU class notation.

Figure 11 shows the global and coastwise qualified well intervention vessel fleet meeting the above deepwater criteria.

At present, there is only one US-coastwise qualified well intervention vessel meeting the aforementioned requirements.

11 Vessel requirements were developed based on discussions with marine contractors, vessel captains, and literature reviews. Individual construction companies may apply different criteria based on their own preferences or specific circumstances.

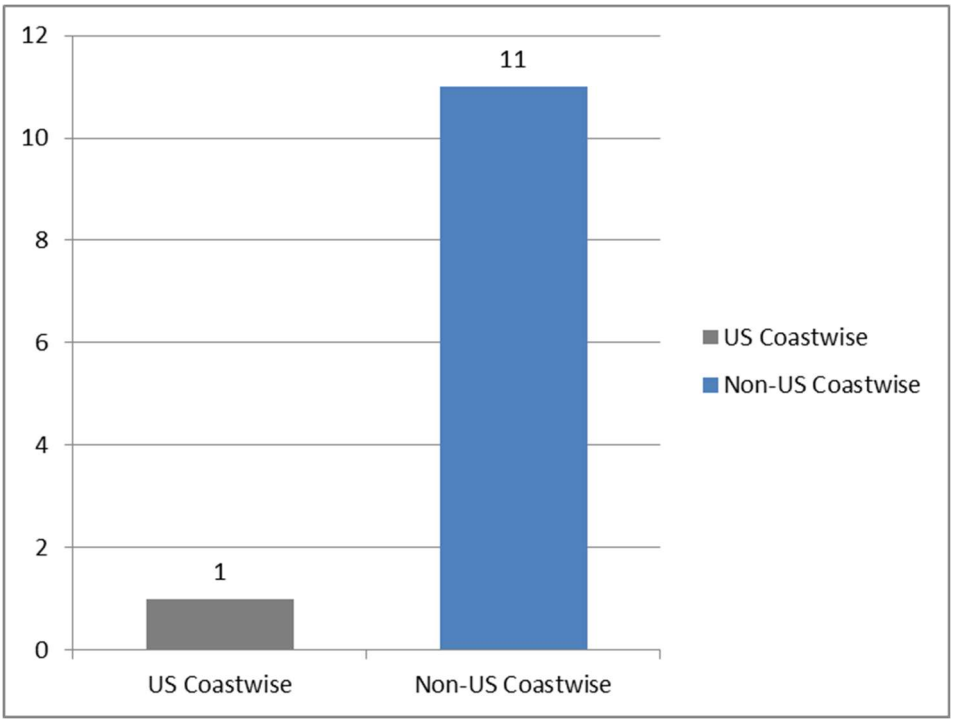

Figure 11 – Worldwide breakdown of coastwise and non-coastwise qualified deepwater well intervention vessel capacity

7.6 Seismic Survey/Geophysical

These vessels are equipped with specialised equipment to collect data needed to characterise the seafloor and underlying geologic formations. Some basic features for a deepwater survey vessel include:

- Echo sounder equipment – multi beam, single beam or side scan;
- Hull transducer;
- Acoustic positioning equipment;
- Hydrophone streamers;
- Seismic sound source arrays (air guns) with appropriate compressors;
- Sound velocity profiling equipment;
- Magnetometer equipment and gravity sensing equipment;
- Antennas and below-decks equipment for satellite positioning;
- Motion reference units – means to detect heave, pitch and roll;
- A-frame and/or back deck space for storage and deployment and recovery of subsea equipment;
- DP capability.

The majority of the survey vessels at home and abroad are engaged in research for universities, institutions and government entities. The coastwise fleet alone has over 65 survey vessels; however, less than 25 are available to support the oil and gas sector. Figure 12 shows the global and coastwise qualified deepwater capable survey and seismic vessel fleet.

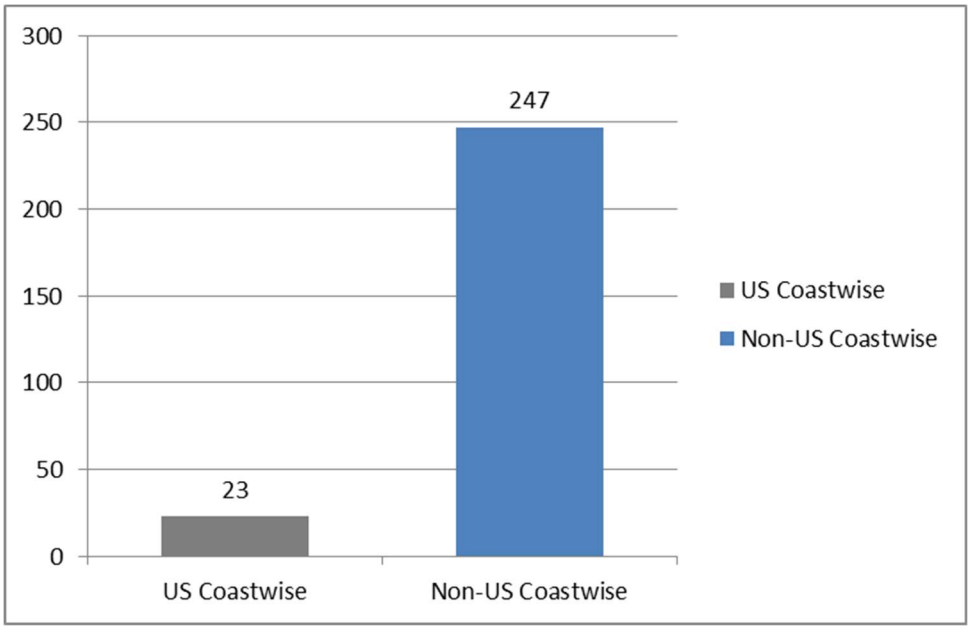

Figure 12 – Worldwide breakdown of coastwise and non-coastwise qualified deepwater survey and seismic vessel capacity

8 Vessels Deployed in the US Gulf of Mexico: 2013-2016 Comparison

This section of the report has quantified the coastwise and non-coastwise qualified offshore vessels in each category believed to have been deployed in the US GoM in 2016 (a poor year) and 2013 (a good year). Figure 13 shows the number of vessels which were operational in the US GoM meeting the following criteria:

- LCVs: DP2 or better; 100T + single fall crane capacity; 1000m + crane working depth;
- Pipelayers: DP2 or better; 100T + top tension;
- Heavy lift vessels: DP2 or better; 1000T + crane capacity;
- Seismic/survey vessels: working on commercial activities;
- Well intervention vessels: DP2 or better; MODU or well intervention notation.

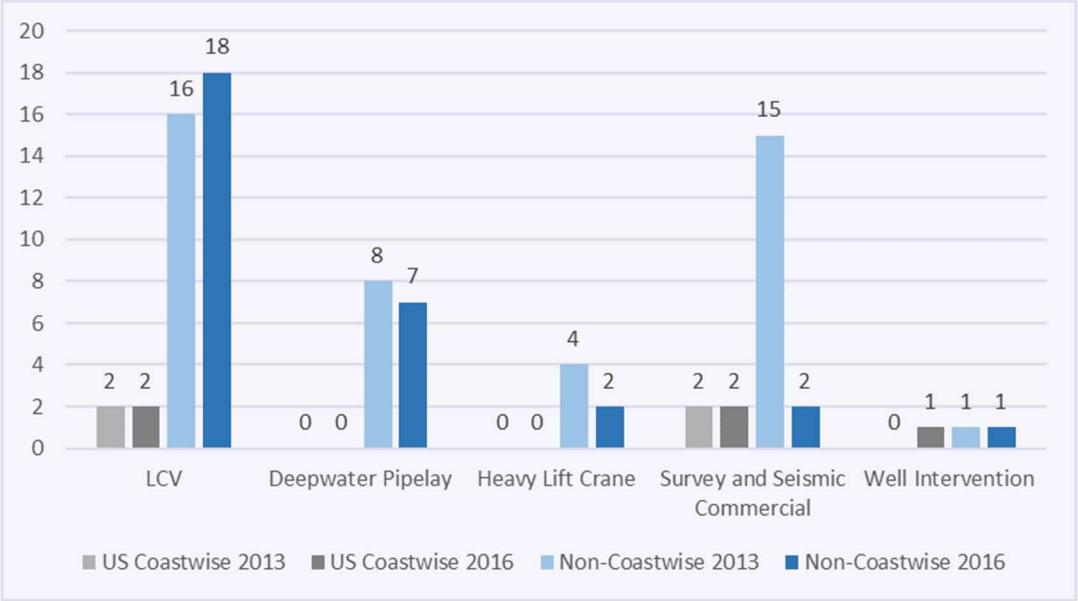

Figure 13 – Offshore support vessels operating in the US GoM 2013 and 2016

The data is remarkable, in that there is very little change in the overall vessel numbers active in four of the five vessel categories considered. The only category showing a major change is survey and seismic vessel segment, which is always the first market to be hit in a downturn. This indicates that these are niche market segments, and that vessel numbers have been stable in both good and poor market conditions. And in neither case has the coastwise fleet been sufficient to meet the needs of the market.

The reason for this phenomenon is readily explained by the fact there are only a handful of large deepwater projects per year, which although generate a lot of drilling and supply vessel activity during the upfront development phase, only require a small number of specialist construction vessels during the installation phase. Table 8 was published by the US Energy Information Administration in February last year and lists the limited number of deepwater and ultra-deepwater projects being worked on in the period 2015-17.

Deepwater Gulf of Mexico field starts (2015)

Field name	Majority operator	Associated project	Water depth (ft)	Discovery year
Silvertip	Shell	Perdido	9,280	2004
West Boreas	Shell	Mars B	3,094	2009
Hadrian South	ExxonMobil	Lucius	7,983	2009
Lucius	Anadarko	Lucius	7,168	2009
Deimos South	Shell	Mars B	3,122	2010
Big Bend	Noble Energy	Rio Grande	7,273	2012
Marmalard	LLOG Exploration	Delta House	6,148	2012
Dantzler	Noble Energy	Rio Grande	6,580	2013

Anticipated Deepwater Gulf of Mexico field starts (2016-17)

Field name	Majority operator	Water depth (ft)	Discovery year	Anticipated production start
Stones	Shell	9,556	2005	2016
Gunflint	Noble Energy	6,138	2008	2016
Heidelberg	Anadarko	5,271	2009	2016
Holstein Deep	Freeport McMoRan	4,326	2014	2016
Son of Bluto 2	LLOG Exploration	6,461	2012	2017
Horn Mountain Deep	Freeport McMoRan	5,400	2015	2017

Table 8 – source: US Energy Information Administration, February 18, 2016

Despite many years of previously healthy demand, the US coastwise industry has not invested in these niche sectors with the exception of the LCV segment. This is because:

1. The vessels and their systems are highly specialised and vastly more expensive than the commodity markets of supply vessels and AHTS vessels.
2. These are global segments; no single domestic market is large enough to support the required investments.
3. This is the domain of international marine contractors, and large investments are needed in engineering, project management and procurement capabilities to execute the work.

These barriers to entry have dissuaded the US coastwise industry from entering these higher risk segments, they have instead invested in high volume commodity segments of supply vessels and AHTS vessels.

9 Conclusions

In 1989, the US Congress Office of Technology Assessment expressed strong reservations about further expanding cabotage restrictions on the US OCS.[12] These reservations remain valid today. The existing cabotage laws are some of the most stringent in the world and have allowed the US OSV fleet to become the largest in the world with over 1,000 ships.

This report shows that the overwhelming majority of OSVs operating in the US GoM are coastwise qualified vessels. The industry readily acknowledges that the US-coastwise qualified fleet is capable of supporting offshore activities in the shallower waters of the Gulf of Mexico. However, for deepwater construction activities beyond 1,000 meters (3,280 feet) this report supports the practical reality that the US-coastwise qualified fleet is pretty much absent from these niche markets.

Current US cabotage laws permit a small market for non-coastwise qualified vessels engaged in specific niche activities other than transport. This report has focused on the five deepwater niche segments of (1) light construction activities, (2) pipelaying including cable/umbilical laying, (3) heavy lift construction, (4) seismic and hydrographic surveying, and (5) well-servicing.

Worldwide, there are approximately 528 vessels technically capable of addressing these niche deepwater markets, of which 33 are coastwise qualified. Importantly, there are no coastwise qualified pipelay vessels, no coastwise qualified heavy lift vessels, and only one coastwise qualified well servicing vessel. There are only nine light construction vessels and 23 survey vessels which are coastwise qualified. Even when some planned new vessels are delivered, the coastwise fleet will not meet the capability or capacity gaps.

Over the past decade, marine service companies have invested in building ships for the alternative high volume markets of logistical supply vessels and tugs, for both the domestic and international markets. This US fleet comprises some 772 ships, 474 of which were active in the US GoM in November 2016. These vessels represent relatively modest unit investment, and the market has a relatively low commercial risk profile. With the collapse in market demand following the oil price crash in mid-2014, the market is now grossly oversupplied and many ships are laid up. This is a world-wide phenomenon and the economic and human distress in terms of job losses is significant during this phase of the business cycle.

With the single exception of the LCV segment, US marine service providers have clearly not invested in the deepwater construction niche markets:

1. Deepwater construction is a high risk business where work is conducted on a fixed price basis, and totally unlike the commodity markets which are day-rate businesses.
2. In addition to specialised ships, contractors need advanced engineering, project management and procurement skills to manage large sophisticated projects on a fixed price basis. This is a market for marine contractors not marine service companies.
3. The specialised ships represent very high levels of unit investment, often incorporating the contractor's intellectual property of equipment design and layout. Unit investments can range from a lower end of around $200 million to upwards of $1 billion at the higher end.
4. This is a world-wide market for the large marine contractors, as no single domestic market can support the levels of investment needed; and many of the assets that work in the deepwater Gulf of Mexico move from one geographic market to another as projects dictate. That said, marine contractors in the US have substantial investments in their workforce, industrial assets and market positioning; and importantly a long history of pioneering development in the GoM.

12 US Congress, Office of Technology Assessment, Competition in Foreign Seas: An Evaluation of Foreign Maritime Activities in the 200-Mile EEZ – Background Paper, OTA-BP-0-55 (Washington, DC: US Government Printing Office, July 1989).

This report shows that the level of demand in the deepwater construction market for these specialist ships has remained pretty much constant in both good and poor market conditions. Whereas the high volume businesses can be expected to do well in a good market, they are left highly exposed in a poor market.

Despite plenty of opportunity, historically the coastwise sector has not invested in the larger, higher value assets in the deepwater construction markets. Nor have they shown the ambition to vertically integrate from vessel owners and marine service companies to marine contractors (which is the history of many contractors). Should the proposed CBP modifications and revocations take place, the impact on business in the Gulf of Mexico could be catastrophic, simply because there would be no capacity to install the production facilities offshore.

The big dollar investments in the Gulf are targeted at the deepwater plays, as these represent the largest and most prolific oil and gas reservoirs. Should these projects be blocked by the banning of non-coastwise approved deepwater construction vessels, or result in increased costs making these investments uneconomic, then it is very unlikely that the projects will happen. In which case, capital can be expected to flow to other projects, potentially abroad. The resulting impact on the whole oilfield supply chain in the USA could cause a collapse in industry confidence and countless job losses onshore and offshore. Such a collapse would have a particularly bad effect on the gulf coast states.

The collateral effects of such a market collapse could be dire. Onshore, the subsea production hardware plants, umbilical manufacturing plants, fabrication spoolbase yards, etc could be empty, with the corresponding impact on engineering and construction companies. While some capacity may be used for exports to international markets, the longer-term response from those markets could well turn negative and protectionist. Offshore, the routine operations of existing facilities and shallow water projects may be able to continue unaffected, but the CBP modifications and revocations could make the US activity uneconomical for marine contractors. It could take years for the coastwise sector to invest in deepwater assets to the necessary level, if ever, which could have dire consequences for any ambitions of growing Gulf of Mexico production. The potential impact and risks to industry look grossly out of all proportion to the intended consequences of the CBP's modification and revocation strategy. A strategy intended to support a limited number of vessel owners could well have enormous unintended consequences for the whole US offshore oil and gas industry.

A Study of an Ultra-deepwater Project in the Gulf of Mexico

A case study to demonstrate the need for international vessel capability to develop deep water fields in the Gulf of Mexico

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Ultra-deepwater Project in the Gulf of Mexico

A study of an ultra-deepwater project demonstrating capability gaps if international vessels are not available to support the development of deep water fields in the Gulf of Mexico

1 Introduction

The International Marine Contractors Association (IMCA) established a technical workgroup to assess the capability of the US coastwise qualified fleet to support the offshore oil and gas industry in the US Outer Continental Shelf (OCS).[13]

This report contains the results of the technical workgroups analysis and assessment. The report studies different phases of the development of the field, details the foreign flagged and non-coastwise qualified[14] vessels used on the project and assesses:

- existing rulings that allow the use of a non-coastwise qualified vessel to perform the scope of work
- if the proposed modification and revocation of rulings would have had an effect on the eligibility of the non-coastwise vessels used to perform the work
- what changes to the methodology would be required to comply with the proposed modifications to the rulings
- if alternative coastwise qualified vessels capable of performing the work are available.

For simplicity, the term non-coastwise qualified is used in this report, as it encompasses both foreign flag vessels and any US flag vessels which are non-coastwise qualified. The requirement for coastwise qualified vessels to be constructed in US shipyards precludes the possibility of re-flagging a foreign vessel to the US register to undertake tasks which are restricted to the coastwise fleet. Not all readers may understand that the terms 'coastwise qualified' and 'US flag' are not synonymous and that a US flag vessel may not be eligible for coastwise qualification.

2 Case Study Project Summary

This study is based on an actual ultra-deepwater project, the operator and project name are not referenced specifically and will be referred to throughout as Case Project.

The Case Project operates in a water depth of over 9,000 feet. The reserves are 30,000 feet below the seabed. The project was chosen to demonstrate how the technology challenges of developing such deepwater fields in the OCS are being met.

The case study will discuss the vessels used throughout the development of the field and focus on:

- whether the proposed modifications and revocations of ruling letters would have affected that vessel's eligibility to perform the work
- whether there are Coastwise approved vessels that can perform that scope and, if not, the barriers to bringing such a vessel to the market.

13 This report has been produced in response to the publishing on 18 January 2017 by the US Customs and Border Protection (CBP) of a notice of proposed modification and revocation of ruling letters related to Customs application of the Jones Act to the transportation of certain merchandise and equipment between coastwise points.

14 Multiple coastwise approved vessels were also used in the field development for transport and other support.

3 Early Development

Exploration of the field required the use of deep water capable drilling rigs, the availability of deep water capable drillships was essential for the viability of the project.

3.1 Effect of Proposed Modifications

The bulletin removes the long standing acceptance that equipment used and supplies incidental to the vessel's service are not merchandise. Ultra-deepwater drillships during exploration often move from one well to another within the same field.

3.2 Coastwise Approved Alternatives

There are no coastwise qualified ultra-deepwater drillships. No coastwise approved rig or vessel could have performed the exploratory drilling for the project.

4 FPSO: Installation of Moorings and Buoy

The Case Study project's host facility is a floating production storage and offloading (FPSO) vessel with a disconnectable buoy that allows the FPSO to move off site in a hurricane event. The buoy is secured to the seabed by suction piles and nine mooring lines. Each line is a combination of polyester rope and chain arrayed in three groups of three.

4.1 Effect of Proposed Modifications

The installation of the buoy (weighing 3000Tons) and its moorings was done by a foreign flagged heavy lift vessel with the assistance of coastwise approved vessels.

Due to recent CBP rulings, there has been significant uncertainty with respect to the term "transportation" as it applies to necessary incidental movement associated with construction work, which for decades has been conducted for safety purposes.

It is clear that the proposed modifications could potentially affect the method used for work offshore and that to facilitate such activities the industry would need a pragmatic, workable means of allowing vessels to make minor movements when working. For example, agreeing to a safe zone within which vessel movements would not be considered to be transportation could provide a solution which allows construction vessels to work without compromising Jones Act requirements concerning transportation.

Before the above mentioned ruling, a lift was considered to begin when the cargo was secured for removal from the transport vessel or from the offshore facility and ended when the load was positioned in place or when the final rigging or cargo was detached from the lifting device and secured on the transport vessel.

From the above, it is clear that the proposed modifications could potentially affect the method used and that to facilitate such activities the industry needs a pragmatic, workable means of allowing vessels to make minor movements when working. For example, agreeing a safe zone within which vessel movements would not be considered to be transportation could provide a

solution which allows construction vessels to work without compromising Jones Act requirements concerning transportation.

4.2 Coastwise Approved Alternatives

Not required. However, it is worth noting that there is no coastwise approved rig or vessel that could have performed the work of installing the moorings and buoy.

5 FPSO

The FPSO is a vessel registered to a country other than the USA. The FPSO is shown in figures 14 and 15.

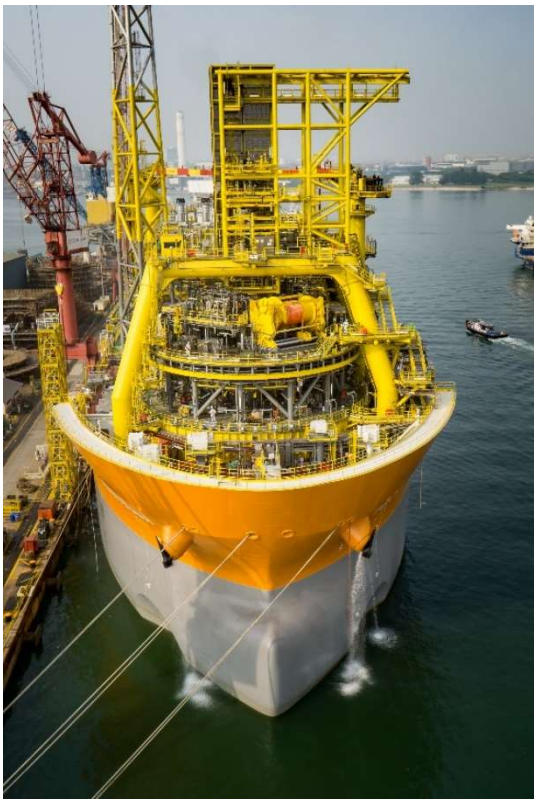


Figure 14 – The FPSO deployed for the case study project being prepared before arriving on location. The large yellow structure on the foredeck is the turret mooring system which connects the vessel to the 3000T disconnectable buoy.

5.1 Effect of Proposed Modifications

As noted in footnote 13, the revocation of HQ 108223 introduces some concern about whether it is permitted for the FPSO to move off of location with chemicals and other materials to support production onboard. There is additional concern that in the event of severe weather then moving off location for reasons of safety could be considered as transportation and as such a violation of the Jones Act.

5.2 Coastwise Approved Alternatives

Not applicable. FPSO was selected, in part, because it can be re-used on future developments. International deployment of a theoretical coastwise approved FPSO build would not be viable as a result of the costs associated with such a vessel relative to alternatives and would, certainly, change the decision making significantly.

Figure 15 – FPSO at anchor being prepared for operation

6 Wellheads

The deepwater trees built in Houston, Texas, were transported to the drillships by coastwise qualified vessels and then installed from the drillships

6.1 Effect of Proposed Modifications

None. The wellheads were transported on coastwise approved vessels.

It should be noted that Subparagraph 10 of HQ 101925 was discussed in the bulletin but the statement in the original ruling that 'use of a vessel in the installation of a wellhead assembly at a location within United States waters, after transportation of such assembly by a vessel entitled to engage in coastwise trade, is not considered a use in coastwise trade' was not questioned and, for this study, is assumed to stand.

6.2 Coastwise Approved Alternatives

Not required.

7 Gas Pipeline

The Case Study project features a gas pipeline which can be used for importing fuel gas or for exporting sales gas. A 20-mile gas pipeline was installed from the FPSO to an existing pipeline system. The gas pipeline system includes a subsea maintenance valve in-line sled (ILS), a pipeline end termination (PLET) at the tie-in and an intermediate manifold.

7.1 Effect of Proposed Modifications

The pipeline was fabricated at a coastal spoolbase located in Alabama and loaded onto a non-coastwise qualified reeled pipelay vessel which then laid the pipeline in the Case Study field. The ILS and the PLET were installed incidental to the pipelay. The manifold was transported to the field by a coastwise qualified vessel and installed by the pipelay vessel.

The long standing ruling that 'the transportation of pipeline connectors to be installed by the crew of the work barge incidental to the pipelaying operations of the work barge is not an activity prohibited by the coastwise laws' is proposed to be revoked. The gas pipeline portion of the Case Study project could not have proceeded as it did if the proposed modifications had been in place.

The following long standing ruling has made pipelay operations permissible in the Gulf of Mexico:

> "*since the use of a vessel in pipelaying is not a use in the coastwise trade, a foreign-built vessel may carry the pipe which it is to lay between such points. It is the fact that the pipe is not landed but only paid out in the course of the pipelaying operation which makes such operation permissible*."

The subparagraph[15] above is not subject to change in the modification bulletin. However, in the explanation of modification of ruling of subparagraph 2) of the same ruling, it is stated;

> "*The statute does not provide exceptions for certain activities. It does not state that if the activity the vessel is engaged in does not constitute coastwise trade then the transportation of the merchandise in order for the vessel to engage in such activity does not violate 46 USC § 55102.*"

It is, therefore, assumed that the transportation of the pipeline from the spoolbase to the Case Study field on the reel of the non-coastwise qualified vessel would not be permitted.

7.2 Coastwise Approved Alternatives

The interpretations of the bulletin explained above remove the option of fabricating the pipeline onshore at a spoolbase and transporting the pipeline on a reel to the field. There are no coastwise qualified vessels that have the equipment to lay a pipeline from a reel. Further, there are no coastwise approved pipelay vessels that can work in the water depth in Case Project field.

15 Citation is from subparagraph 1) of HQ 101925 (7 October 1976)

The alternative to this would be to transport the pipe to the field on a coastwise qualified vessel, transfer the pipe to the DP lay vessel, weld the pipe on the vessel and lay it. This can be done in either J-lay or S-lay. There are several non-coastwise qualified vessels that are capable of performing the work in this manner.

8 Flowlines

The case study project has two Steel Lazy Wave Risers and flowlines that tie to the first drill centre and two flowlines to the second drill centre. The risers have buoyancy to provide a wave in the riser configuration. The risers also feature a combination of fairings and strakes to protect against surface current induced vortex-induced vibrations (VIV). PLETs are installed at the drill centre end of the FPSO flowlines and on each end of the in-field flowlines.

8.1 Effect of Proposed Modifications

HQ15311 (10 May 2001) clarified that the use of a non-coastwise qualified vessel for the installation of flexible flowlines, umbilical lines and risers on the OCS does not constitute a violation of 46 USC App. § 883. This ruling is proposed to be withdrawn.

As with the gas pipeline, the flowlines were fabricated at a coastal spoolbase and loaded onto a foreign flagged reeled pipelay vessel that then laid the flowlines in the Case Study field. The PLETs were installed incidental to the pipelay.

Again, it is assumed that the transportation of the flowlines from the spoolbase to the Case Study field on the reel of the non-coastwise flagged vessel would not be permitted.

Further, the transportation of the PLETs, buoyancy, strakes and fairings by the non-coastwise pipelay vessel would not be permitted. Prior to the bulletin, such items were considered to be permitted since they are 'installed by the crew of the work barge incidental to the pipelaying operations'.

8.2 Coastwise Approved Alternatives

As stated for the gas pipeline, there are no coastwise approved pipelay vessels that can work in the water depth in Case Project field.

9 Umbilicals

Two high voltage electro-hydraulic umbilicals are installed between the FPSO and the first drill centre. A single umbilical connects the first drill centre to the second.

The umbilicals were manufactured in a facility in Florida and, for the umbilicals between the FPSO and the first drill centre (referred to as the dynamic umbilicals), transpooled into carousels on a non-coastwise qualified dedicated umbilical and flexible pipe installation vessel at the facility in Florida then installed in the Case Study field. The riser configuration used for the umbilicals was a pliant wave configuration. This required a clamp/anchoring system as well as buoyancy modules. Fairings were installed to address concerns about VIV. The umbilical termination assemblies (UTA) consisted of mudmats with a hydraulic

distribution manifold. All of these accessories (including the UTA mudmats) were transported on the installation vessel and installed incidental to the laying of the umbilicals.

The static umbilical between the two drill centres was loaded onto a reel and lifted into a reel drive system on a non-coastwise qualified specialty umbilical and flexible pipe installation vessel that then installed it in the Case Study field. The static umbilical had a UTA mudmat at each end, that were transported on the installation vessel and installed incidental to the lay.

9.1 Effect of Proposed Modifications

As noted above, it is assumed that the transportation of the umbilicals from the fabrication site to the Case Study field on the non-coastwise vessel would not be permitted and the umbilical installation for the Case Study project could not have proceeded as it did if the proposed modifications had been in place.[16]

9.2 Coastwise Approved Alternatives

There are no coastwise approved vessels capable of installing the dynamic umbilicals. The deep water and large (and heavy) umbilicals created a maximum umbilical top tension of around 170 tonnes. Only a small number of vessels are capable of gripping that tension without crushing the product and none of them are coastwise qualified.

The static umbilical was delivered on a reel and was smaller (and lighter) than the dynamic umbilicals. There are no coastwise vessels with a lay system capable of installing the static umbilical. However, since the umbilical is on a reel, the reel could, in theory, be transported to the field on a coastwise approved vessel then lifted onto the lay vessel. Note that for Case Study project, the chosen installation vessel's crane would not have been able to lift the loaded reel, though there are other non-coastwise qualified vessels with a suitable lay system and crane.

10 Subsea Distribution Hardware (SDH)

Steel tubed and electrical flying leads connect the wells and manifolds to the umbilicals. Electrical distribution modules (EDMs) are located at both drill centres. This equipment was transported on the installation vessel and installed incidental to the laying of the umbilicals.

10.1 Effect of Proposed Modifications

The SDH (connectors) has previously been installed from the lay vessel incidental to the laying of the umbilical. Previous ruling letters had stated[17] "the use of a foreign-flag vessel to transport … connectors … would not violate the coastwise laws if the work was done from the vessel, but would violate the coastwise laws if the vessel merely transported the connectors … and the connection operation was not performed on or from that vessel." For the reason explained above (when discussing the gas pipeline), the Case Study project could not have proceeded as it did if the proposed modifications had been in place.

16 HQ15311, as previously stated, is proposed to be withdrawn and was used as the basis of demonstrating that this scope was permitted.
17 Citation is from HQ15311 which, as previously stated, is proposed to be withdrawn.

10.2 Coastwise Approved Alternatives

There are coastwise approved vessels capable of installing the SDH. Also, the SDH could be transported on a coastwise approved vessel and transferred to a non-coastwise vessel in the field.

11 Artificial Lift System (ALS)

At a future date the Case Study project will be provided with a complete artificial lift system, which is expected to boost production by approximately 20%.

The overall dimensions of the ALS manifold are 40 feet by 65 feet by 27 feet, and the structure weighs approximately 400 metric tonnes. The pump station sits on a suction pile with a diameter of 32 feet and length of 50 feet, which alone will weigh approximately 200 metric tonnes.

To provide power and controls to the pump system, a variable frequency drive (VFD) building will be installed on the FPSO. It is built as one unit and will be installed offshore.

11.1 Effect of Proposed Modifications

The ALS subsea pile is to be transported to the field on a coastwise approved vessel and installed with a non-coastwise qualified vessel.

The subsea manifold also will be transported to the field on a coastwise approved vessel and installed with a non-coastwise vessel.

The topside power and control unit will be transported to the field on a coastwise approved vessel and installed with a non-coastwise vessel.

Given the above, and given the assumption detailed earlier in the FPSO section, whether or not the ALS installation would be affected by the proposed modifications is dependent upon the position taken by the CBP on incidental movement. Usually the safe over boarding locations will be the equivalent of a nominal 10% water depth away from subsea structures. If any lateral movement is deemed to be transport of merchandise then this would likely prevent the installation being carried out by non-coastwise qualified vessels.

11.2 Coastwise Approved Alternatives

There are no coastwise approved vessels capable of installing all of the ALS components.

12 Jumper Pipe Connectors

Jumpers are installed to connect the manifolds to the pipelines, flowlines or trees. These jumpers are fabricated at coastal fabrication facilities, loaded onto coastwise approved vessels, transported to the field where they were installed by a foreign flagged construction vessel.

12.1 Effect of Proposed Modifications

None. The assumption made earlier about incidental movement of a vessel during installation operations would continue to make this work permissible to be performed as it was.

12.2 Coastwise Approved Alternatives

There are some coastwise approved vessels capable of installing the jumpers in the same manner.

13 Safety Considerations

In various stages described above, the proposed alternative methods that are suggested involve transporting items on a coastwise vessel to the field and transferring offshore. Vessel to vessel transfers are commonplace in the offshore industry but they are a risk that is preferred to be avoided. Introducing more vessel to vessel lifts than needed inarguably makes the industry less safe.

14 Summary

As shown in Table 9, one impact of the proposed modifications for the Case Study project would have been that more vessels would have to be used than needed. However, the particular specialist equipment required for the transportation and installation of the umbilicals had no reasonable alternative and would have meant that the project may not have been able to go ahead.

Phase	Non-coastwise Qualified Vessel(s) Used?	Effect from Proposed Modifications?	Coastwise Alternative?	Impact from Modifications?
Early development	Yes	Possibly	No	Safety, cost
Installation of FPSO buoy and moorings	Yes	Possibly	No	Unclear, subject to clarification on incidental movement
FPSO	Yes	Possibly	No	Safety, cost
Wellheads	Yes	No	No	None
Gas pipeline	Yes	Yes	No	Safety, cost, availability
Flowlines	Yes	Yes	No	Safety, cost, availability
Umbilicals	Yes	Yes	No	Not possible to proceed
SDH	Yes	Yes	Yes	Cost, availability
ALS	Yes	Possibly	No	Not possible to proceed
Jumpers	Yes	Possibly	Yes	None

Table 9

Silhouettes of Offshore Vessels

Heavy lift semi-submersible vessel

Heavy lift monohull vessel

Pipelay vessel – reeled

Pipelay vessel – rigid

Well intervention semi-submersible vessel

Well intervention monohull vessel

Light construction vessel >350ft

Light construction vessel 300-350ft

Platform supply vessel

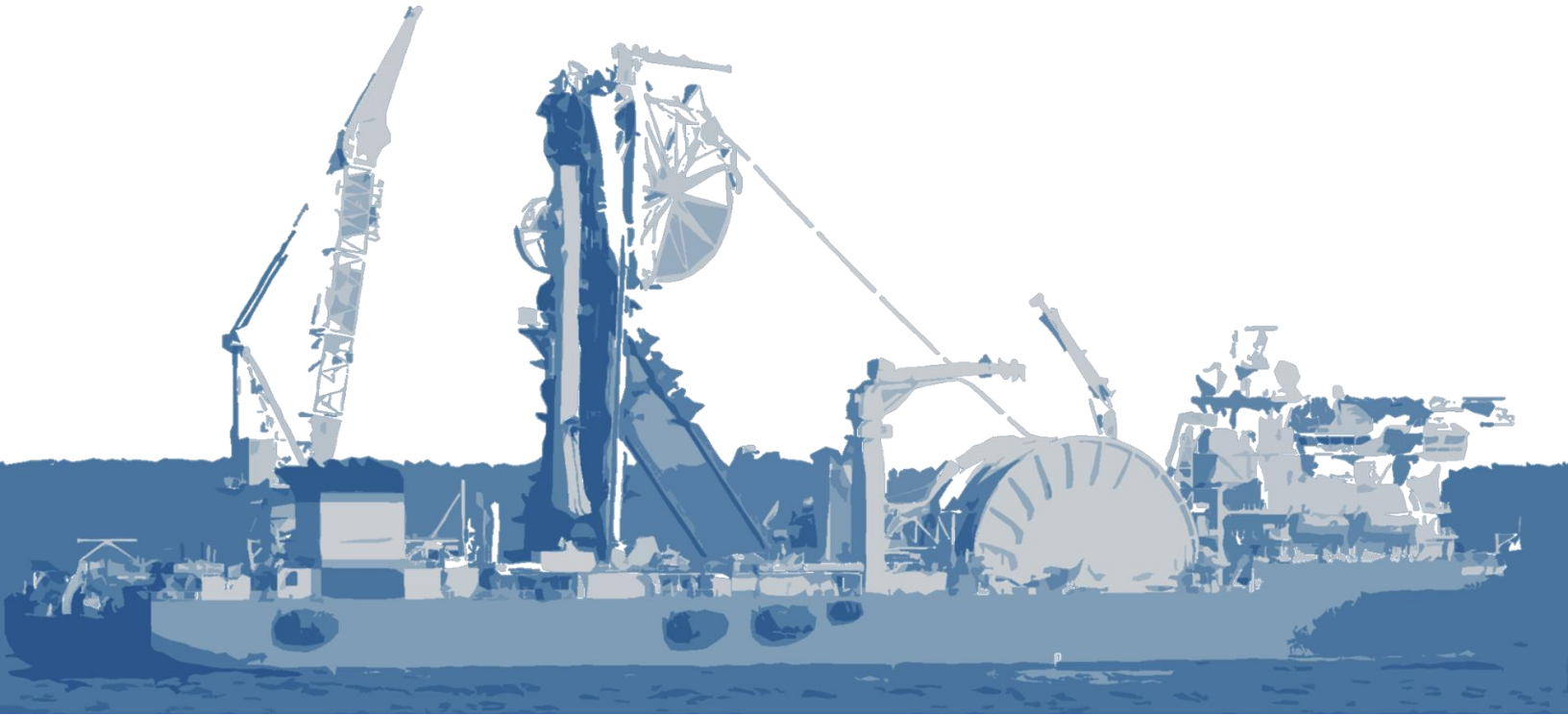
Economic Impacts of Proposed Modification and Revocation of Jones Act Ruling Letters Related to Offshore Oil and Natural Gas Activities

Prepared For:

The American Petroleum Institute (API)

Prepared By:

CALASH



Executive Summary

Introduction

The Customs and Border Protection Agency (CBP) announced proposed modifications and revocations to around 30 identified rulings, as well as additional unidentified rulings, related to the use of Jones Act (coastwise) vessels in offshore oil and natural gas activities on January 18, 2017. The modifications and revocations change long-standing rulings related to vessels transporting and using specialized equipment used in the oil and natural gas industry. The proposed modifications and revocations would likely fundamentally impact and change the development of offshore oil and natural gas projects on the U.S. Outer Continental Shelf (OCS).

Calash was commissioned by the American Petroleum Institute (API), to provide an independent evaluation of the potential impacts on offshore oil and natural gas project development and spending associated with the proposed changes. In addition, potential impacts on Gulf of Mexico oil and natural gas production, supported employment, gross domestic product, and government revenue were also projected. The conclusions set forth in this study are based solely upon government and other publicly-available data and Calash's own expertise and analysis.

Overall, given the time constraints and conservative assumptions associated with this study, it is likely that the costs and economic impacts presented represent a conservative projection of the impact of the proposed modifications and revocations. The impacts presented could be imprecise by as much as 10% or more for a variety of reasons, including government agency interpretations and enforcement decisions.

Impact of Proposed Modifications and Revocations on Gulf of Mexico Oil and Natural Gas Development

If the proposed revocations and modifications are finalized, the study projects a potential reduction in the total amount of Gulf of Mexico oil and natural gas activity, as well as the domestic content of future projects. The proposal would likely negatively influence development, as projects that are under development or have not been installed are delayed, and project economics and risk profiles are negatively impacted. The largest impact of the proposed changes is likely to be due to the inability to use foreign flagged subsea construction, reel lay, and heavy lift vessels to develop U.S. offshore oil and natural gas projects. Depending on the interpretation of the proposed modifications and revocations, a wide variety of vessels including mobile offshore drilling rigs, shallow and deepwater crane and lay vessels and well stimulation vessels may also be affected. Additionally, while U.S. installation content may increase, some activities which previously took place in the U.S. may move to other countries, impacting U.S. employment (e.g.

reeling of pipe, manufacturing subsea hardware and umbilicals and fabricating topsides and modules).

Total cumulative spending on offshore oil and natural gas development in the Gulf of Mexico OCS is projected to be in the range of $460 billion between 2017 and 2030 or in the range of $33 billion per year. If the proposed changes are adopted, the study projects cumulative spending from 2017 to 2030 to be in the range of $385 billion, an average reduction in the range of $5.4 billion (15 percent) per year.

Economic Impact of Proposed Modifications and Revocations

The study projects total employment supported from the Gulf of Mexico offshore oil and natural gas industry to rise from employment in the range of 300 thousand in 2017 to employment in the range of 520 thousand by 2030 under the base development scenario. The adoption of the proposal is projected to lead to a reduction in industry supported employment in 2017 in the range of 30 thousand jobs as projects are delayed, and a reduction in the range of 125 thousand jobs in 2030 due to reduced activity and U.S. content.

The Gulf of Mexico offshore oil and natural gas industry is expected to contribute an estimated $25.2 billion annually to U.S. GDP in 2017, and is projected to grow to over $42 billion by 2030. The proposed modifications and revocations, if adopted as written, are projected to lead to a reduction of GDP supported by Gulf of Mexico oil and natural gas activities of $9 billion annually by 2030. The cumulative lost GDP burden of the proposal from 2017 to 2030 is estimated at $91.5 billion.

Annual government revenues from Gulf of Mexico lease sales, rents, and royalties are expected to rise from about $5.6 billion in 2017 to $8.8 billion by 2030 under the base development scenario. Reduced oil and natural gas development projected under the proposed modifications and revocations is projected to lead to lower overall government revenues. This is primarily because of fewer production royalties being collected due to lower production volumes of an average of around 575 thousand barrels of oil equivalent per day (a 23 percent reduction). Reduced government revenues are projected to average around $1.9 billion per year from 2017 to 2030.

Adoption of the proposed revisions and revocation of Jones Act ruling letters related to the use of non-coastwise vessels for offshore oil and natural gas activities in the U.S. OCS is projected to lead to significant delays in offshore exploration and development projects, reduced overall activity levels, and reduced U.S. content. This is further projected to lead to reduced activity and spending, which is projected to lower production, employment levels, and growth in GDP and government revenues.

Study Limitations

This paper has been limited in scope to the assessment of the effects of the currently proposed revisions and modifications to Jones Act rulings affecting offshore oil and natural gas development activity. Any further revisions to rulings are likely to have increased limiting effects on oil and natural gas activities in the U.S. OCS. Additionally, if the currently proposed revisions are interpreted in such a way that further decreases the ability of non-coastwise vessels to operate in support of oil and natural gas activities in the OCS then the effects of these revisions would likely be larger than what is outlined in this report. This would include changes which construe incidental movement as coastwise transport, and decreased drilling efficiency and availability if mobile drilling units are required to offload either consumables (casing, mud, etc.) or vessel equipment (marine riser, etc.).

The study also excludes potential supply chain reductions due to reduced activity levels in the Gulf as projects are delayed due to the adoption of the proposed revocations and revisions, as well as potential disruptions to the supply chain if larger marine construction companies which possess in house engineering and project management consequently exit the region.

The study has also excluded the impacts of activity in the Alaskan, Pacific, Eastern Gulf and Atlantic OCS regions, which would be greater if changes to the currently proposed 2017-2022 OCS Oil and Gas Leasing Program are made. As such, exploration and production activities in these OCS areas are projected to see similar disruptions under the proposed changes. The study also excludes potential impacts of expired leases due to project delays.

Overall, given the constraints and assumptions discussed above, it is likely that the costs and economic impacts presented in this study represent a conservative projection of the impact of the proposed modifications and revocations. The impacts presented could be imprecise by as much as 10% or more for a variety of reasons, including government agency interpretations and enforcement decisions.

Impact Summary

This study projects that the following impacts may result if the proposed modifications and revocations are implemented:

- A loss of up to 30 thousand jobs in 2017 and average decreased employment of over 80 thousand jobs from 2017 to 2030.
- Between 2017 and 2030, decreased Gulf of Mexico offshore oil and natural gas spending in the range of $5.4 billion on average per year.

- An average reduction in oil and natural gas production in the range of 0.5 Million Barrels per day from 2017 to 2030.
- An average loss of more than $4.3 billion of GDP from 2017 to 2030.
- An average loss of more than $1.9 billion of government revenue per year from 2017 to 2030.

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Section 1 – Introduction

1.1 Purpose of the Report

On January 18, 2017, the Customs and Border Protection Agency announced proposed modifications and revocations to around 30 identified rulings, as well as additional unidentified rulings, related to the use of Jones Act (coastwise) vessels in oil and natural gas drilling and construction activities. These previous rulings, some of which dated back forty years, clarified when and in what ways non-coastwise vessels could be used to support offshore oil and natural gas development activities. The proposed revisions would fundamentally alter the way offshore oil and natural gas activities take place in the U.S. OCS due to the specialized nature of the affected vessels.

Calash was commissioned by the American Petroleum Institute (API), to provide an independent evaluation of the potential impacts on project development and spending associated with the proposed modifications and revocations. In addition, Calash also projected potential impacts on Gulf of Mexico oil and natural gas production, supported employment, GDP, and government revenue. The conclusions set forth in this study are based solely upon government and other publicly-available data and Calash's own expertise and analysis.

1.2 Report Structure

In this report, Calash will first outline the study methodology including the development of data, the review of the modifications and revocations and their potential impacts on vessel types, the limitations of this study and how the two scenarios used in the report were developed. The next section will discuss the potential impact on offshore oil and natural gas development, including the impact on projects, production, and spending. The third section examines the potential economic impacts of the proposed modifications and revocations, including employment impacts, GDP impacts, and government revenue impacts. The final section concludes.

1.3 Excluded from This Study

This paper has been limited in scope to the assessment of the effects of the currently proposed changes to Jones Act rulings affecting offshore oil and natural gas development activity. The potential effects of the proposed modifications on MODUs has been excluded because this is likely to be highly dependent on CBP's interpretation of the proposed modifications and revocations. We do note that the domestic vessel industry has taken the position that MODUs are impacted, and any further revisions to rulings are likely to have increased adverse effects on oil and natural gas activities in the U.S. OCS. Additionally, if the currently proposed revisions are interpreted in such a way that further decreases the ability of non-coastwise vessels to operate in

support of oil and natural gas activities in the OCS then the effects of these revisions would likely be larger than what is outlined in this report.

The study also excludes potential supply chain reductions due to reduced activity levels in the Gulf as projects are delayed due to the adoption of the proposed revocations and revisions, as well as potential disruptions to the supply chain if larger marine construction companies which possess in house engineering and project management exit the region.

The study has also excluded the impacts of activity in the Alaskan, Pacific, Eastern Gulf[1] and Atlantic OCS regions, which would be greater if changes to the currently proposed 2017-2022 OCS Oil and Gas Leasing Program are made. It is a very likely possibility that exploration and production activities in these OCS areas would see similar disruptions under the proposed changes. The study also excludes potential impacts of expired leases due to project delays.

The study also does not attempt to calculate the effects of the proposed modifications and revocations on mid-stream or down-stream oil and natural gas entities. In addition, the calculated government revenue potential does not include personal income taxes, corporate income taxes or local property taxes.

Given the unpredictable nature of advancements in technology and innovation in the oil and natural gas industry, the scope of this paper was limited to the effects that new requirements would have on future activity with the assumption that the methods and equipment mentioned in the proposed revisions would still be in use at the end of the study period.

Overall, given the constraints and assumptions discussed above, it is likely that the costs and economic impacts presented in this study represent a conservative projection of the impact of the proposed modifications and revocations. The impacts presented could be imprecise by as much as 10% or more for a variety of reasons, including government agency interpretations and enforcement decisions.

1.4 About Calash

Since Calash's creation it has evolved from an oil and natural gas commercial and operational due diligence provider into an award-winning energy advisory firm providing strategy, business advisory, economic analysis, and mergers and acquisitions support services. As a function of Calash's core business, the company is engaged daily in the collection and analysis of data as it relates to the oil and natural gas industry. Calash serves the global community of operating oil and natural gas companies, their suppliers, financial firms, and many others by providing detailed analysis on projects, investments, capital investment and operational spending

[1] The Economic Benefits of Increasing U.S. Access to Offshore Oil and Natural Gas Resources in the Eastern Gulf of Mexico, Quest Offshore, November 2014

undertaken by the onshore and offshore industries. Calash analyzes market data from a variety of sources at the project level for projects throughout the world.

Section 2 – Study Methodology

2.1 Data Development

The authors of this report have undertaken a detailed review and analysis of proposed revisions to rulings related to the use of Jones Act (coastwise) vessels in oil and natural gas drilling and construction activities. As the effects of these revisions are open to a wide interpretation, the authors have made a good faith effort to provide a reasonable interpretation of how these revisions would likely be interpreted and enforced. This study is in no way exhaustive, especially considering the relatively short period available to develop this analysis and the high degree of uncertainty around the implementation of these revisions.

This analysis focuses on the likely operational effects of these revisions on project development activity, and considers the potential operational changes oil and natural gas operators and contractors could implement to minimize the effects of the revisions. As such, this analysis is essentially forward looking and potentially subject to significant changes based on the interpretation and enforcement of the revisions by the Customs and Border Protection Agency who is responsible for enforcement of the Jones Act.

Due to the limited time available to prepare this report, as well as the significant uncertainties about the way revisions would be implemented and interpreted if adopted, the projected costs, engineering requirements and operational burdens for all the proposed revisions are not included in this report. Additionally, the internal costs to CBP of implementing and administrating the proposed revisions are not calculated in this report.

2.2 Requirements Review and Vessel Fleet

The Merchant Marine Act of 1920, also known as the Jones Act, is a United States federal statute that regulates maritime commerce in U.S. waters and between U.S. points. Amongst other things, the Jones Act defines cabotage requirements for U.S. waters requiring that all goods transported by water between U.S. points be carried on U.S.-flag ships, which were constructed in the United States, are owned by U.S. citizens, and are crewed by U.S. citizens and/or U.S. permanent residents. Historically, rulings by CBP held that the Jones Act did not apply to certain types of drilling, pipelay, heavy lift and other construction vessels that operate in the Gulf of Mexico and other OCS areas. Despite these rulings, the vast majority of vessels operating in support of offshore oil and natural gas activities have been coastwise vessels; CBP requires that vessels transporting persons and supplies to offshore drilling rigs and platforms, such as platform supply vessels and crewboats, be coastwise vessels.

The proposed modifications and revocations to rulings including HQ 101925, HQ 108223, HQ 108442, HQ 113838, HQ 115185, HQ 115218, HQ 115311, HQ 115522, HQ 115771, HQ

105644, HQ 110402, HQ 111889, HQ 112218, HQ 113841, HQ 114305, HQ 114435, HQ 115333, HQ 115487, HQ 115938, HQ H004242, and others as well as "Any rulings raising the subject issues which may exist but have not been specifically identified"[2] (along with modifying (in an unspecified manner) HQ 11892, HQ 115381, HQ 116078, HQ 32757), would likely greatly alter the way offshore oil and natural gas projects are executed in the U.S. OCS. Specifically, the modifications and revocations would fundamentally alter the definition of vessel equipment that CBP has used in its coastwise trade rulings related to offshore oil and natural gas activity in the past. The amended interpretation would allow "portable articles necessary and appropriate for the navigation, operation or maintenance of the vessel and for the comfort and safety of the persons on board" to be transported on non-coastwise vessels but would revoke previous rulings which allowed these vessels to transport equipment which was considered "in furtherance of the mission", "fundamental to the operation of the vessel", "used by a vessel in the course of its business", "necessary to carry out a vessel's functions" or similar terminology which was used across various headquarters rulings.

Previously, headquarters rulings HQ 111889 and HQ 115938 stated that articles to be installed, such as templates, marine risers, oilfield equipment and structural components, are vessel equipment, while rulings HQ 112218 and HQ 113137 stated that cement, chemicals and other materials are also vessel equipment. This allowed non-coastwise vessels to participate in drilling and construction activities in the U.S. OCS and formed the basis for offshore oil and natural gas activities in the country. The considerable uncertainty around how these proposed revocations and modifications would be interpreted further increases the potential impacts to offshore oil and natural gas activities.

The following types of vessels used in offshore oil and natural gas activities are potentially affected by the modifications and revocations proposed by CBP.

Mobile Offshore Drilling Units (MODU)

Mobile offshore drilling units, include jack-up drilling units, for use in shallow water (up to around 400 feet), as well as floating rigs, including drill ships and semi-submersibles, for use in water depths ranging from 500 to 12,000 feet. Floating rigs can be either moored to the sea bed or utilize dynamic positioning systems for station keeping. Currently there are around thirty MODUs active in the Gulf of Mexico. Of the total worldwide active or warm stacked MODU fleet of around 850 vessels, only a small number of older shallower water jack-up units (the majority of which are currently cold stacked) are coastwise qualified. No floating drilling rigs capable of

[2] Customs Bulletin and Decisions, Vol. 51, No. 3, January 18, 2017., Proposed Modifications and Revocation of Ruling Letters Relating to Customs Application of the Jones Act to the Transportation of Certain Merchandise and Equipment Between Coastwise Points

operating in deep water are coastwise qualified[3]. The proposed modifications and revocations' effect on MODUs is likely to be highly dependent on CBP's interpretation of the proposed modifications and revocations. While these vessels do not typically transport equipment from shore and are resupplied by coastwise vessels, they frequently transit from well site to well site (some of which may be less than twenty feet away from other sites) with equipment such as pipe and drilling riser. For the purposes of this study, it is assumed that this type of activity will not be affected by the proposed changes. However, the domestic vessel industry has taken the position that such activity is deemed to be coastwise trade, and thus mobile drilling units must be offloaded and reloaded with respect to drilling materials and equipment (casing, mud, marine risers, blow-out preventers, etc.). Depending on the CBP's interpretation, this potentially could add seven to fifteen days per well (if it is even operationally feasible) potentially increasing annual drilling costs in the Gulf of Mexico in the range of $715 million on average. This increase in costs would likely make some wells uneconomic to drill and some projects uneconomic to develop.

Crane Barges

Crane Barges are non-self-propelled barges equipped with various cranes for lifting jackets, topsides, modules or other equipment. They are used in installation, decommissioning, and other non-oil and natural gas related construction activities. These barges must be moved to location using tug boats and are moored when in operation by anchoring to the sea bed (which prevents them from operating in deepwater). The effect of the proposed modifications and revocations on the ability of non-coastwise crane barges to operate will likely be less than on dynamically positioned heavy lift vessels as they are anchored to the sea bed and restricted to shallow water work and thus less likely to move while lifting. However, in cases where movement whilst lifting is required or possible this movement could be construed as coastwise transport. There are currently 17 coastwise crane barges, compared to a global fleet of 173. However, most of these vessels are located outside of the main oil and natural gas regions and are not equipped to engage in oil and natural gas activities. The largest of these crane vessels have lifting capacities of 800 to 1,000 tons which covers most shallow water lifts, but would be incapable of lifting the largest fixed platform jackets and topsides in the Gulf of Mexico. This restriction could be circumvented by increasing the number of lifts to install or decommission heavier items which would increase operational complexity, costs and safety risks. Alternatively, in some cases this could lead to operators fabricating topsides, jackets, or modules, which require a larger crane barge, outside the U.S. to avoid the potential that movement while lifting might be construed as coastwise transport under the proposed modifications and revocations.

[3] The Helix Q4000 is Coastwise qualified and classed as a mobile offshore drilling unit but is generally employed for well intervention rather than drilling.

Shallow Water (Derrick) Pipelay

Shallow water pipelay vessels are typically non-self-propelled barges utilizing a tensioner and a stinger to lay pipelines in under 500 feet of water. These vessels utilize anchors and tug boats to move while pipelines are welded on the barge and fed into the water. They can lay pipeline for shallow water projects as well as shallow water sections of pipelines from deeper water projects. These vessels typically receive pipe from transportation barges and are thus unlikely to be significantly affected by the proposed modifications and revocations. Currently, there are seven coastwise vessels of this type compared to around 120 worldwide.

Deepwater Pipelay

Deepwater pipelay vessels perform a similar function to shallow water pipelay vessels but typically install larger diameter pipes greater than 12 inches, although some J-lay vessels are capable of installing smaller lines (for the purposes of this study reel deepwater pipelay vessels are included in the “Reel pipe, umbilical and cable lay category”). In contrast to shallow water pipelay vessels, deepwater vessels are self-propelled and possess dynamic positioning systems for station keeping. Under the currently proposed modifications and revocations these vessels are likely to see a minimal impact (due to increased offshore transfers) as they are typically equipped for offshore pipe transfer and welding from coastwise vessels. However, if the proposed modifications and revocations were to be interpreted to mean that the transportation of pipe while laying constituted coastwise transport, the use of non-coastwise vessels (none of the 19 active deepwater vessels are coastwise) would be prohibited and the effect on deepwater projects would likely be extremely significant. The small number of these vessels globally is a function of their extreme specialization and these vessels typically transit around the world for projects due to the lack of consistent demand in any one region.

Dive Support / Multipurpose Support / Remotely Operated Vehicle Support Vessels (DSV/MPSV/ROV)

This category includes a wide variety of vessels which perform light construction work across water depths using divers, remotely operated vehicles (ROV), and smaller cranes. While some vessels in this category can perform only one of these roles, many are equipped, or can be equipped, to perform a variety of work. Diving vessels may be equipped for either air or saturation diving, ROV vessels typically have work class ROVs, and the cranes on these vessels typically can lift between 100 and 400 tons. Some of these cranes are equipped with special heave compensators to install equipment in deep waters. These vessels perform installation of subsea equipment, hookup, and other miscellaneous work for offshore oil and natural gas projects and frequently move while lifting for operational and safety purposes. Currently, across this category there are thirty-one coastwise vessels out of a global fleet of around 450. There is a specific lack

of larger coastwise vessels with lifting capacity of greater than 250 tons for use in deepwater, which with the required crane radius (lifting capacities are decreased for larger radiuses) makes coastwise vessels unsuitable for subsea lifts greater than 150 tons. Additionally, there is a lack of coastwise "DP3" vessels whose station keeping ability is more resilient in case of faults. The lack of larger cranes and more resilient station keeping ability may lead to larger subsea equipment being fabricated outside the U.S. to avoid coastwise requirements as well as delays to projects due to reengineering to avoid operationally difficult or unsafe lifts. If incidental movement were to be construed as coastwise transport at a later time, further reductions in the ability of foreign flagged DSV/MSV/ROV vessels' ability to work in the US would be expected.

Reel Lay Pipe and Umbilical Lay Vessels

These vessels load steel or flexible pipelines, umbilicals or cables onto vertical or horizontal reels or carousels, transport the product to the field and then install the product onto the seafloor. Reel vessels are typically used for deepwater projects but can in some cases install shallow water pipelines and umbilicals. Typically, the maximum diameter of pipelines these vessels can install is sixteen inches, which accounts for the majority of pipelines within fields. These vessels do not possess the capability to efficiently weld many sections of pipe onboard and thus typically load pipe at a manufacturing facility or spool base (typically a long strip of land on the water with a firing line of welding stations). These vessels possess powerful tensioners to spool the product as well as to hold it in place while laying. Most of these vessels do not have the ability to load reels offshore and these vessels are thus used for smaller diameter sections of pipe, which they can install much faster and more efficiently. There is currently only one coastwise vessel in this category, out of 82 worldwide, which is a barge utilized for laying shallow water power cables. If the currently proposed modifications and revocations are implemented, non-coastwise vessels in this category would be unable to load product from U.S. spool bases or manufacturing plants and install them in fields on the U.S. OCS as this would constitute coastwise transport. As there are no coastwise vessels currently capable of performing this, all deepwater projects requiring the use of these vessels (which would include all major deepwater projects) would be unable to proceed as currently engineered, contracted and planned. This would prevent these projects from moving forward until such a time as an alternative solution could be identified. Due to the specialized nature of individual vessels it is unlikely that U.S. activity alone would support new ship building activity in this sector. Alternative solutions, such as loading pipelines, umbilicals and other products outside the U.S., may be utilized.

Heavy Lift Construction Vessels

Heavy lift construction vessels are large, often semi-submersible, vessels that can lift as much as fifteen thousand tons. These vessels are used to install topsides and modules, install moorings in deepwater, pull in risers, install subsea equipment, and perform decommissioning work. These vessels, which are typically dynamically positioned and self-propelled, are some of the costliest and most complex vessels involved in offshore oil and natural gas construction. There are 76 of these vessels in the global fleet, none of which are coastwise vessels. One coastwise vessel, the VB10,000 which uses an unusual barge-mounted dual truss system is capable of lifting fixed topsides and jackets up to 7,500 tons but is limited by its crane hook height when lifting topsides and modules and does therefore not typically undertake traditional heavy lift work. Worldwide, the number of vessels capable of performing the largest lifts in deepwater is less than ten. Use of these vessels is required for the largest deepwater projects, for many complex tasks in addition to classical topsides lifts, such as the installation of moorings and pulling in risers from extreme water depths. The proposed modifications and revocations would likely prevent these vessels from movement while lifting U.S. built topsides or equipment and would only permit these vessels to rotate their cranes while lifting. Although it is possible that some work could be completed under these conditions, it would be impossible to predict the need for movement for safety or operational purposes while lifting, thus falling afoul of the proposed modifications and revocations. Due to the specialized nature of these vessels, their tendency to work across the world's oil and natural gas areas, their high cost, and the lack of facilities capable of constructing these vessels in the U.S., it is unlikely that Jones Act compliant vessels would be constructed. Operators and contractors therefore may utilize non-U.S. yards and fabricators to construct potentially affected equipment to avoid conflicting with these modifications and revocations. If further changes to CBP rulings were to be adopted which considered incidental movement to be coastwise transport, further reductions in the ability of foreign flagged DSV/MSV/ROV vessels' ability to work in the US would be expected.

Other Potentially Affected Vessels

In addition to the above vessel types, many other vessels are utilized in offshore oil natural and gas operations in the U.S. OCS. While some of these vessels, such as platform supply vessels and crewboats, are unlikely to be significantly affected by the changes as they were previously required to be coastwise and there is a large U.S. fleet, the effect on other vessel types will depend on the interpretation and enforcement of the proposed modifications and revocations. Other potentially affected vessel types include well stimulation vessels (if the transport of onboard fluids between well sites is deemed to be coastwise trade), seismic vessels (if the transport of streamers and other seismic equipment is deemed to be coastwise trade), and well intervention vessels (if the transport of coiled tubing or other intervention equipment is determined to be

coastwise trade). Due to the limited information available, and the wide effects of potential rulings these vessels have been excluded from the effects of this study. However, the potential for reduced project spending and economic activity as a result of the proposed changes exists depending on the interpretation of the proposed rulings and revocations and should be considered as part of the potential effects depending on the interpretation and enforcement of the proposed modifications and revocations.

2.3 Limitations of the Report

The report's authors make no representation as to the effects of proposed revocations and rulings not addressed specifically in this report and do not discount the possibility that these proposed changes could impose significantly greater engineering, operational, cost or other burdens on industry or regulators. The report's authors' estimates herein of the effects that proposed revocations and rulings will have on current and future engineering, operations, and costs are an independent good faith qualitative view arising from a reasonable review of the proposed rulings and revocations. As these rulings are subject to interpretation by Customs and Border Protection (CBP) and other regulators the effects of these changes will be highly dependent on CBP's interpretation and enforcement. Calash provides this independent view expressly disclaiming any warranty, liability, or responsibility for completeness, accuracy, use, or fitness to any person for any reason.

2.4 Scenario Development

The report's scenario development focused on constructing a tiered "bottom-up" model that separates the complete life cycle of offshore operations and subsequent effects into three main categories and five sub categories. The three main categories are as follows: 1) an "Activity" model that assesses potential reserve information in the context of estimating the possible number of projects within the Gulf of Mexico OCS and the currently forecasted projects and trends in exploration and project development in the region; 2) a "Spending" model based on the requirements to develop projects within the "Activity Forecast"; and 3) an "Economic" model focused on the economic impact on employment and government revenue from the "Spending" model. These categories include leasing activity, drilling, infrastructure & project development, and production & operation.

After the creation of the baseline model utilizing the oil and natural gas price strip and production profile from the Energy Information Administration's "Annual Energy Outlook 2017"[4], the potential effects of the proposed revisions and revocation were considered on the basis of both potentially affected vessel types as well as potentially affected offshore oil and natural gas

[4] Annual Energy Outlook 2017, Energy Information Administration

activities. Potential effects that were unclear or considered unlikely given a reasonable reading of the proposed changes were excluded from the study. The following potential effects were deemed most likely to impact U.S. OCS oil and natural gas activities based on direct impacts from affected vessels types. (Table 1)

Table 1: Projected Direct Vessel Impacts from Proposed Modifications and Revocations

Vessel Type	Potential Impact of Proposed Modifications and Revocations	Potential Effect
Crane Barges	Coastwise vessels available for lifts up to 1,000 tons only.	Largest projects (greater than 1,000 tons) delayed, postponed or cancelled due to lack of available vessels, increased engineering and operational complexity. Potential safe lifting issues. Fabrication of large topsides moved outside of US.
DSV/MPSV/ROV	Lack of available coastwise vessels to complete construction work especially lifting of larger equipment in deepwater.	Project currently underway but not installed delayed, postponed or cancelled. Increased engineering and operational complexity. Potential safe lifting issues. Fabrication of equipment moved outside of US.
Reel Lay Pipe and Umbilical Lay Vessels	Reel vessels unable to load pipe, umbilicals, or other product at US spool bases or manufacturing facilities.	Deepwater projects currently underway but not installed delayed, postponed or cancelled. Fabrication, manufacturing, welding and loading of reeled products moved outside of the US.
Heavy Lift Construction Vessels	Heavy lift construction vessels unable to move while lifting US built topsides, modules, moorings and other equipment.	Due to operational and safety issues larger projects delayed, postponed and cancelled. Fabrication of platform topsides, modules, moorings and other subsea equipment moved outside of the US.

Source: Calash

In addition to the potential direct impacts based on the above vessel types, further impacts due to the proposed modifications and revocations are likely due to the increased operational complexity of projects, planning, engineering and procurement issues, as well as due to operators' strategies for developing projects under the proposed changes. (Table 2)

Table 2: Other Projected Impacts from Proposed Modifications and Revocations

Cause of Impact	Potential Impact of Proposed Modifications and Revocations	Potential Effect
Engineering, Operational and Safety Impact	The proposed revisions and revocations would likely lead to increase engineering and operational complexity as well as potentially unsafe operations if work was performed by a less robust vessel with a smaller safety factor.	Operators may delay, postpone, or cancel projects where increased costs effect project economics or engineering, operational, or safety concerns increase risks.
Engineering Procurement and Planning Issues	Currently underway projects are delayed or postponed due to the need to plan, engineer, and contract these projects due to the proposed revocations and revision.	Delay of current projects will delay later projects out due to limited operator engineering, project management, and procurement resources.
Increased costs and complexity of projects affect project feasibility and economics	Potential project may fail to meet IRR thresholds compared to competing projects (Both US and International) and inability to meet operator safety/risk thresholds.	Larger and more complex projects may be permanently cancelled reducing overall project activity
Potential increased costs and complexity of projects affect offshore exploration activity	Potential exploration targets may fail to meet IRR thresholds compared to competing exploration targets (Both US and International) and inability to meet operator safety/risk thresholds.	Reduced explorations, discoveries, and project development activity
Fabrication and manufacturing moved outside of the US	To avoid coastwise equipment transport regulations operators and contractors may relocate spool bases, umbilical manufacturing, fabrication and other facilities outside the US.	Reduced domestic US content, spending and employment.
Increased US shipbuilding and local installation content	Vessel owners may order and deploy additional US construction vessels where demand is consistent enough to justify these orders (likely MSV/DSV/ROV vessels)	Increased US shipbuilding and increased US installation spending and employment after vessels are constructed.

Source: Calash

After the potential impacts of the proposed changes and revocations as discussed in the above tables were considered, the effects on near term projects were considered. Upcoming near term projects were classified based on if the major installation activity had been completed, and if, not how, this activity may be affected. For projects not yet installed, depending on the size and complexity of the project an appropriate delay (generally one to three years) was applied to the projects' timing. For projects not yet sanctioned, potential delays were calculated along with an estimation of the likelihood that the project could be postponed or cancelled. For exploration activity as well as potential projects from new discoveries, a general factor based on potential complexity was applied to account for projected reductions in activity due to increased complexity, costs and risk. The potential delays and reductions in activity were applied to the base scenario forecast resulting in the creation of the "Proposed Modifications and Revocations Scenario" which attempts to provide a reasonable projection of oil and natural gas exploration and development activity in the Gulf of Mexico OCS if the proposed modifications and revocations were adopted as currently proposed. After the development of this scenario, the scenario's potential implications for oil and natural gas production, employment, GDP, and government revenues were then calculated.

Section 3 – Impact on Development

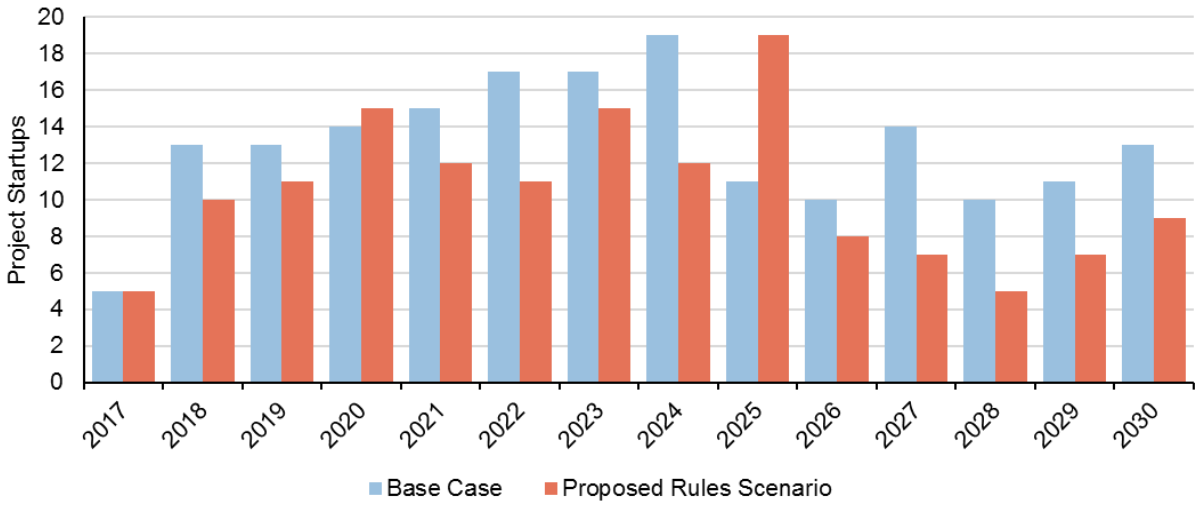
Natural gas and crude oil exploration and production activities in the U.S. OCS provide large contributions to employment, gross domestic product and state and federal government revenues. To quantify the effects of the proposed Jones Act modifications and revocations, the study forecasted activity levels for Gulf of Mexico OCS oil and natural gas activity with and without the proposed changes. The forecasted activity levels include the number of wells drilled, projects executed, total production, and spending. These activity forecasts drive the spending projections from which GDP, employment and government revenue effects are estimated.

3.1 Projects Executed

The development of an offshore oil and natural gas project is a complex process that requires a significant amount of time, planning and high levels of capital investment. Changes to project planning, engineering and contracting strategies typically lead to project delays as well as project cancellations due to changes in project economics and risk profiles. Project executions and their respective timelines are the best indicator of overall market health, as they can be viewed as representative of total trends in production, employment and revenue for the market.

Over the forecasted period of this study (2017-2030), the proposed modifications and revocations are projected to lead to a decline in the number of projects coming online in the range of twenty percent. A decrease in the number of projects coming online is projected as soon as 2018, and apart from one year (2025 as previously delayed projects begin production) this effect is projected to persist throughout the forecast period. (Figure 1)

Figure 1: Projected Gulf of Mexico OCS Project Startups 2017-2030 Base Case and Proposed Modifications and Revocations Scenario



Source: Calash

It should be noted that overall project numbers in both scenarios in the latter part of the forecast are lower than in the earlier part of the forecast due to a projected shift towards larger deepwater projects in the Gulf of Mexico. Larger deepwater projects are typically more complex and require more wells and a longer development period, in addition to requiring increased material resources and larger equipment such as platforms, production trees and pipelines. Smaller projects, on the other hand, often rely on larger projects for certain types of infrastructure such as pipelines or processing facilities. This leads to the spending, production and other effects on a per project basis to be highly variable.

3.2 Production

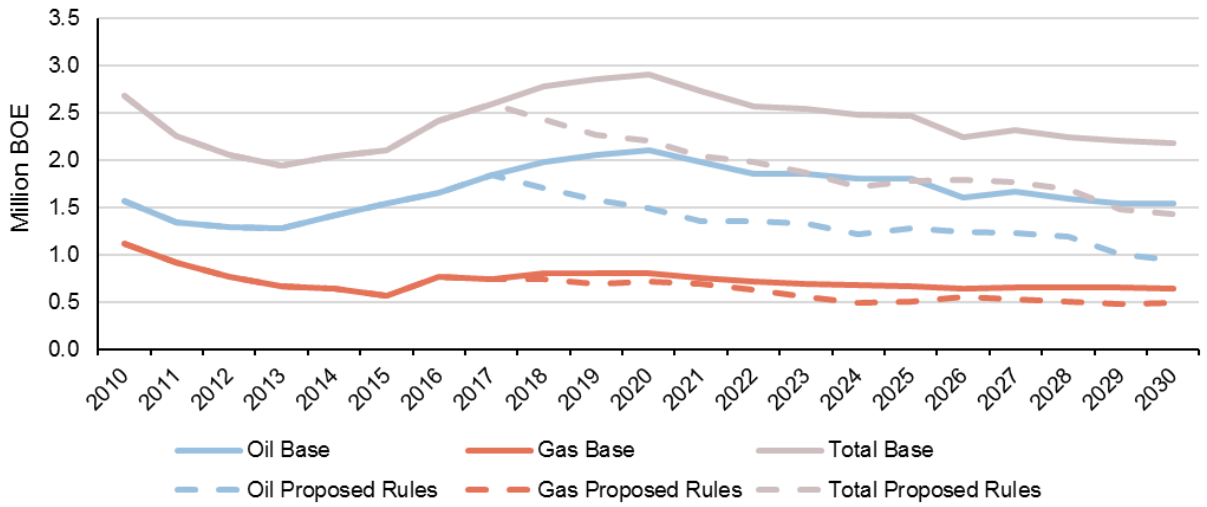
The number of projects developed, coupled with reservoir size, productivity and decline rates determines oil and natural gas production levels. Most oil and natural gas reservoirs contain a combination of oil, natural gas, water, and other substances. In order to forecast aggregate production, each project or potential project was modeled based on production curves for similar developments and reservoirs. The base case production curve for this report was modeled to be relatively in line with the projected offshore production forecast from the Energy Information Administration's "Annual Energy Outlook 2017".[5]

This study projects production in the Gulf of Mexico in the range of 2.6 million barrels of oil equivalent (BOE) per day in 2017, with production peaking in the range of 2.9 million BOE per day in 2020 in the base case before slowly declining throughout the forecast period.

[5] Annual Energy Outlook 2017, Energy Information Administration

Approximately 72 percent of production in 2020 is projected to be oil (2.1 million BOE per day), and approximately 28 percent of the production is projected to be natural gas (.8 million BOE per day). Under the proposed modifications and revocations, reductions in Gulf of Mexico production are projected to be in the range of 23 percent over the forecast period. (Figure 2)

Figure 2: Projected Gulf of Mexico Oil and Natural Gas Production Base and Proposed Modifications and Revocations Scenarios



Source: EIA, Calash

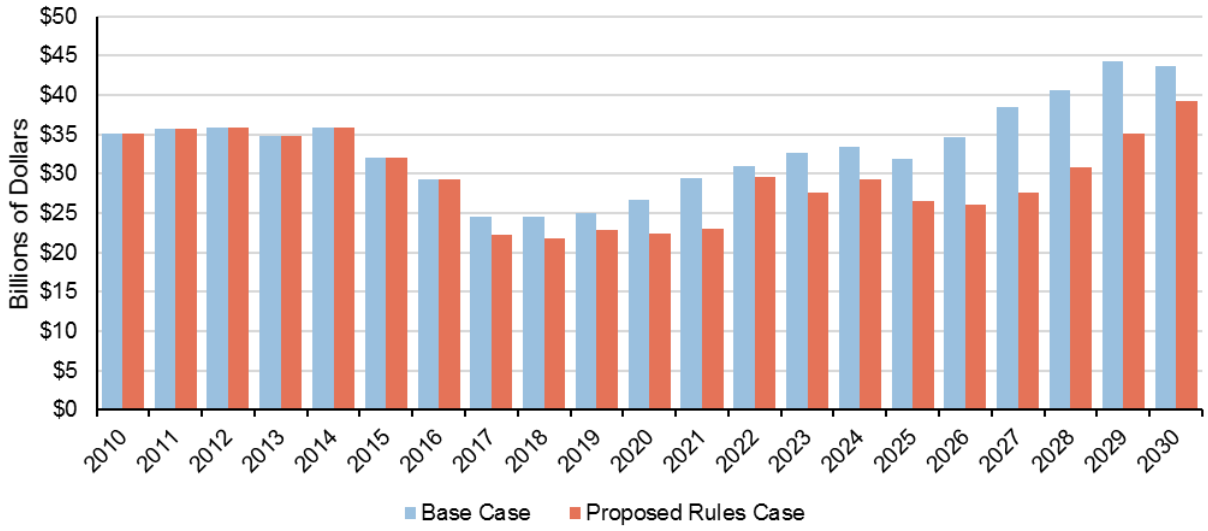
3.3 Spending

Offshore oil and natural gas exploration and development is a capital-intense process. Offshore projects require exploratory seismic surveys, drilling, production equipment, engineering, and operational expenditures to maintain production. In the base case, cumulative spending from offshore oil and natural gas development from 2017 to 2030 is projected to be in the range of $460 billion, compared to projected spending in the range of $385 billion in the proposed modifications and revocations case. This represents a decline across the period of 17 percent, or projected spending in the range of $27.5 billion per year compared to projected spending in the range of $33 billion a year in the base case.

For the purposes of this report, spending is divided into seven main categories: Drilling, Engineering, G&G, Installation, OPEX, Platforms, and Subsea Umbilicals, Risers and Flowlines (SURF). Each category encompasses a major type of exploration and production activity and has a significant influence on overall spending. Both development scenarios estimate total spending amounts that rise slightly through the end of the decade, decline briefly, then recover due to normal project development cycles. Under the base case, spending on offshore oil and natural

gas is projected to stay relatively flat through 2019 before beginning to recover relatively strongly throughout the forecast period with some fluctuations due to normal project cycles. (Figure 3)

Figure 3: Projected Total Offshore Oil and Natural Gas Spending Base and Proposed Modifications and Revocations Cases



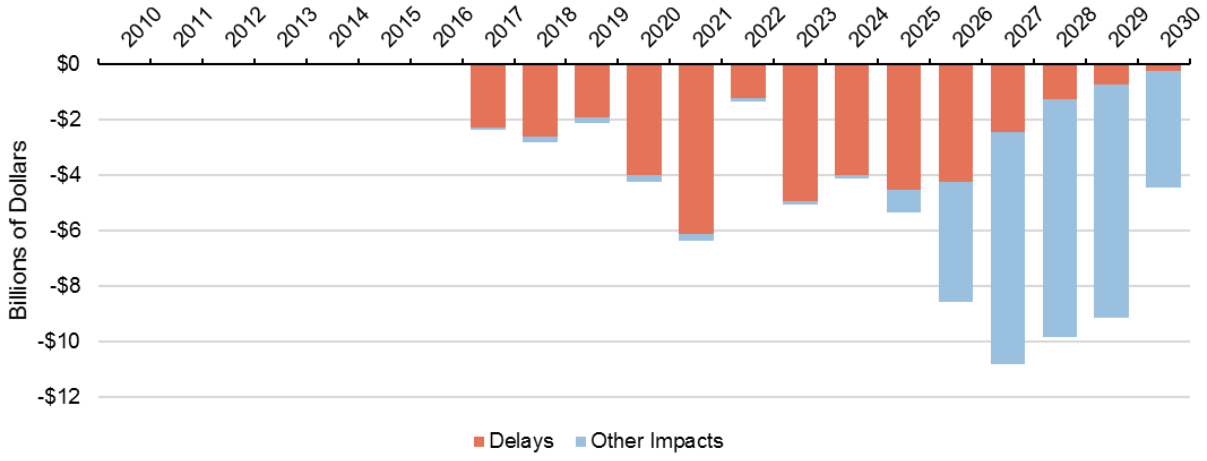
Source: Calash

In contrast, in the proposed modifications and revocations case spending is projected to drop below the base case this year (2017) as projects currently under development but not installed are delayed. Spending is projected to stay relatively flat through 2021 before beginning to recover. Spending is projected to remain below the base case spending levels throughout the forecast period, with spending trending towards the base case levels towards the end of the forecast as operators and contractors adapt to the changed operating environment resulting from the proposed modifications and revocations.

3.4 Lost Spending Analysis

Reduced spending because of the proposed modifications and revocations is projected due to project delays, as well as to reduced drilling and project activity due to failure to meet IRR thresholds compared to competing projects and exploration targets. Additionally, projects are projected to be delayed or canceled due to an inability of projects to meet operator safety/risk thresholds. According to this analysis 47 percent of lost spending across the forecast period is projected to be due to project delays, while 53 percent of lost spending is projected to be due to projects not executed or exploration wells not drilled. (Figure 4)

Figure 4: Lost Spending Analysis – Projected Reduced Spending by Cause



Source: Calash

Delays account for the vast majority of reduced spending in the early years of the forecast period. In 2026 they account for roughly half of reduced spending. After 2026, spending reduction due to project economics and risk profiles accounts for most reduced spending.

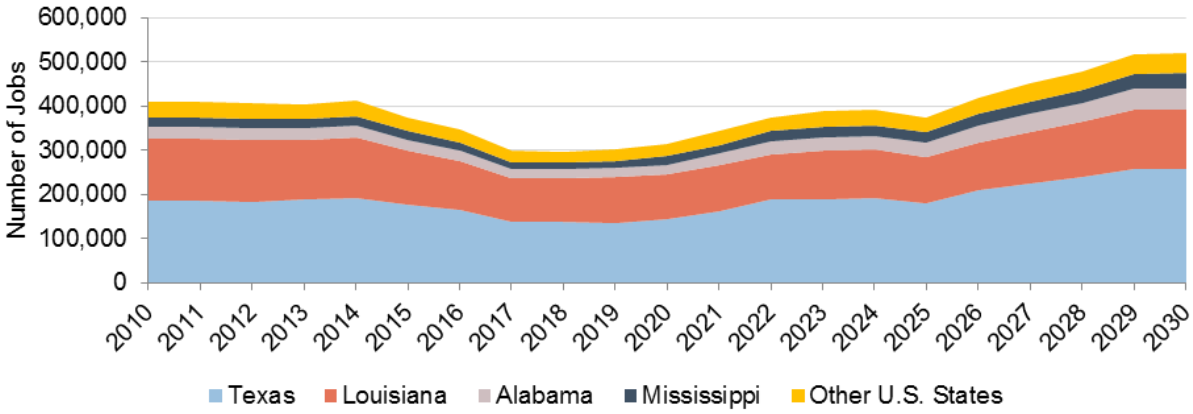
Section 4 – Macro-Economic Impact Conclusions

4.1 Employment

The offshore oil and natural gas industry has a long history of significant employment in the United States, particularly in the Gulf Coast states. Continued investment in offshore infrastructure led to a large U.S. based supply chain that has provided high wages to large numbers of workers. Despite the major downturn in the global oil and natural gas industry, Calash estimates that the offshore oil and natural gas industry is likely to support nearly 300 thousand U.S. jobs in 2017 in the base case (including indirect and induced employment)[6].

As the industry begins to recover, employment is projected to grow throughout the forecast, reaching total supported employment in the range of 520 thousand jobs in 2030 in the base case. In 2020, employment due to offshore oil and natural gas related activities is projected to be in the range of 260 thousand if the proposed modifications and revocations are adopted, compared to employment in the range of 310 thousand in the base case. (Figure 5)

Figure 5: Projected Employment by State - Base Scenario



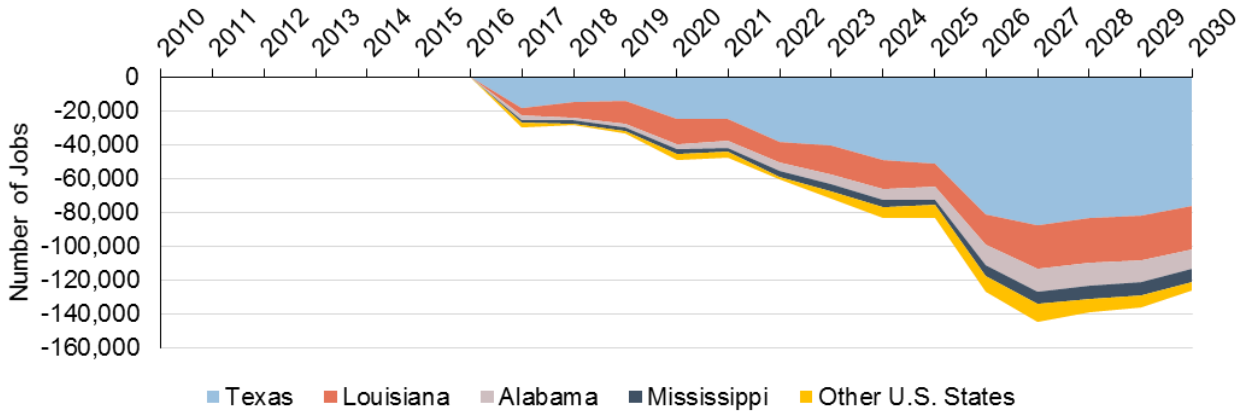
Source: Calash

In contrast, if the proposed modifications and revocations are adopted, average employment in 2017 is projected to drop to below 270 thousand jobs as projects are delayed and canceled due to the inability to execute them as they were planned, engineered and procured. By the end of the forecast period in 2030, employment due to offshore oil and natural gas activities is projected to be in the range of 390 thousand jobs due to reduced spending and the movement of spool bases, manufacturing of umbilicals and equipment and fabrication of some topsides

[6] Indirect jobs are those related to the oil and natural gas supply chain. Induced jobs are created from more income that is spent throughout the economy.

outside of the U.S. This decrease is net of increased employment in U.S. installation spending due to increased U.S. installation content. (Figure 6)

Figure 6: Projected Jobs by State – Proposed Modifications and Revocations Scenario

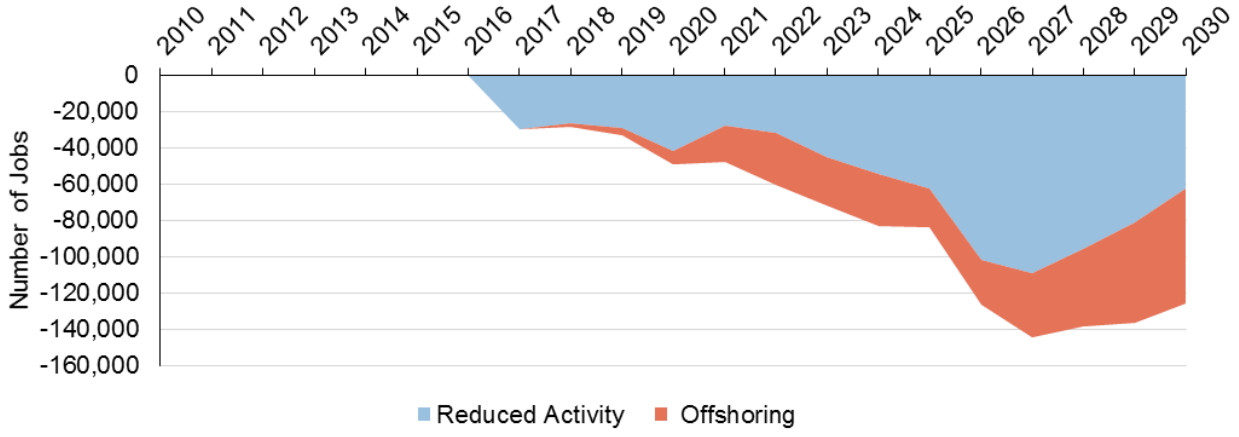


Source: Calash

4.2 Employment Impact Analysis

Decreased employment in the proposed modifications and revocations case is due both to decreased overall spending and activity levels as well as decreased U.S. content as certain activities, such as the reeling and welding of pipelines, manufacturing of umbilicals and fabrication of certain topsides and subsea equipment is moved to other countries. Although the exact strategies operators and contractors may employ to develop U.S. OCS projects if the proposed modifications and revocations are adopted will depend on a variety of factors, offshoring certain activities to countries such as Mexico (due to its proximity to U.S. Gulf of Mexico oil and natural gas activity), South Korea (due to its highly developed platform fabrication industry), or Brazil (due to its large capacity for manufacturing umbilicals and other subsea equipment) to enable projects to be economically developed may reduce overall U.S. content in U.S. OCS projects. This study projects that lost employment would average in the range of 82 thousand jobs over the forecast period, of which 69 percent on average is projected to be due to reduced spending (net of increased U.S. shipbuilding spending), while 31 percent on average is projected to be due to reduced U.S. content (net of increased U.S. installation content). (Figure 7)

Figure 7: Lost Employment Analysis – Projected Reduced Employment by Cause



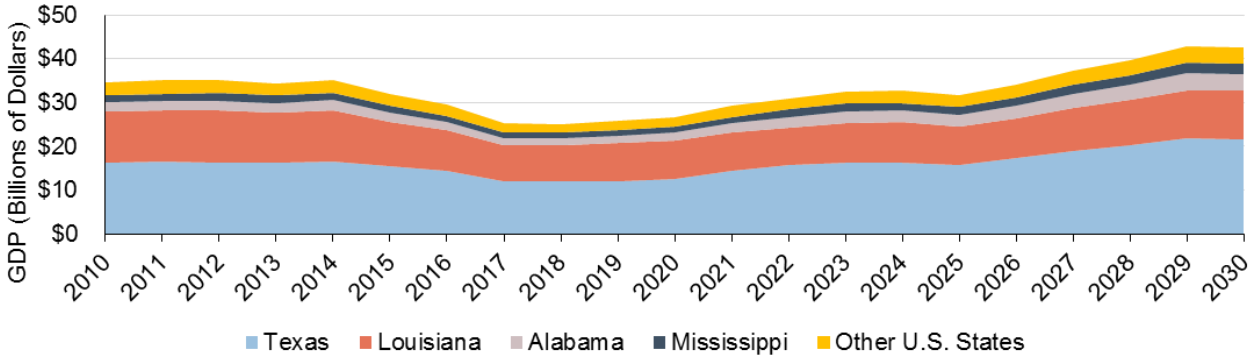
Source: Calash

4.3 GDP (Gross Domestic Product)

Potential gross domestic product (GDP) effects were calculated as a multiplier on spending within the U.S., further utilizing the BEA's RIM II model. The estimated effects of proposed modifications and revocations are therefore likely to be strongly correlated to any shifts within spending, with international spending excluded, and mirror the shifts of employment.

The GDP impact of the Gulf of Mexico offshore oil and natural gas industry in the U.S. in the base case in 2017 is projected to be around $25 billion, and is projected to continue to grow to around $42.5 billion by 2030. (Figure 8)

Figure 8: Projected GDP by State - Base Scenario

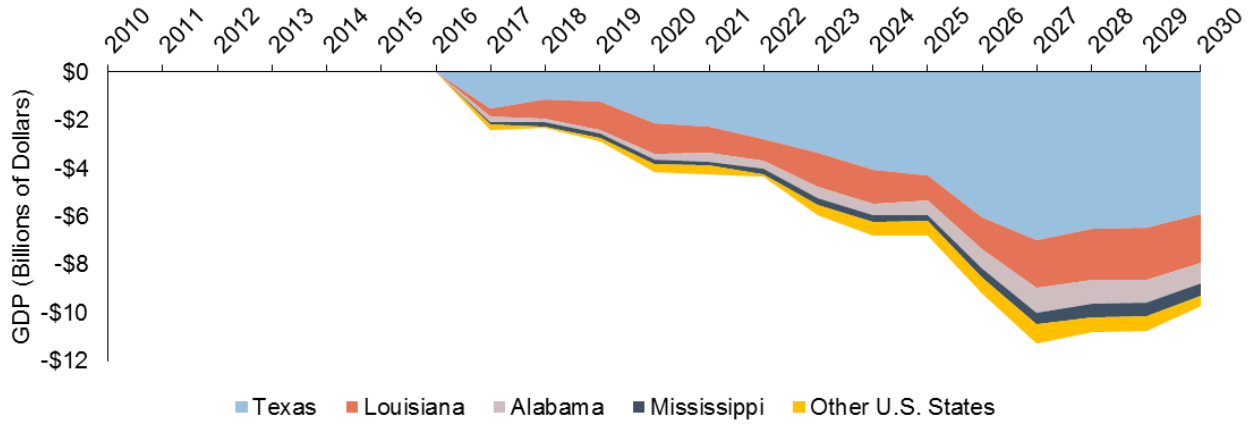


Source: Calash

The proposed modifications and revocations, if adopted as written, are projected to lower the GDP impact from Gulf of Mexico oil and natural gas activities by nearly $2.4 billion in 2017,

and around $7.7 billion in 2030. Cumulative lost GDP from 2017 to 2030 is projected to be around $90 billion. (Figure 9)

Figure 9: Projected Lost GDP by State – Proposed Modifications and Revocations Scenario

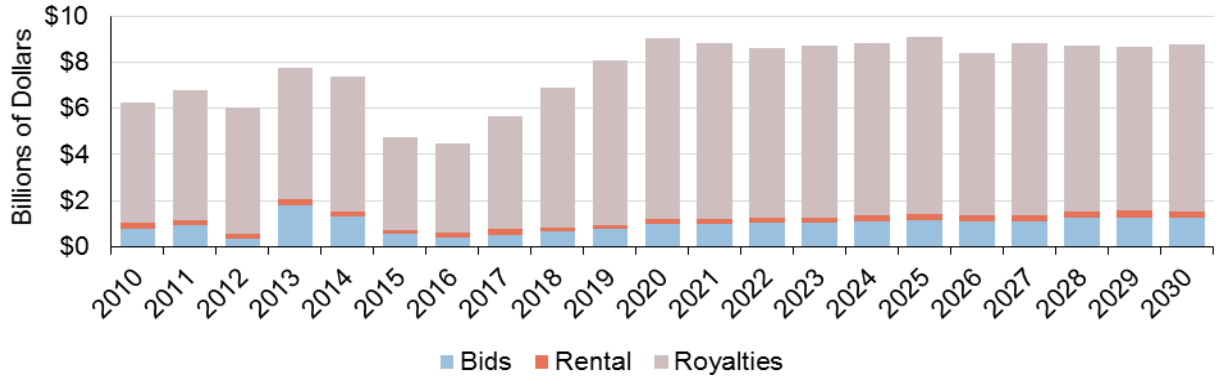


Source: Calash

4.4 Government Revenues

Government revenues due to Gulf of Mexico offshore oil and natural gas operations are currently collected through three main revenue streams: revenue from lease sales, lease rental rates, and production royalties. The distribution of these revenue streams is heavily skewed towards production royalties, which account for around 80 percent of revenues from offshore oil and natural gas activities. Total government revenues from Gulf of Mexico offshore oil and natural gas royalties have been between $4.5 and $7.5 billion in recent years, lease sale revenues have been between $300 million and $1.5 billion, lease rental revenues have been approximately $200 million per year, and production revenues have provided around $4 to $5 billion per year. (Figure 10)

Figure 10: Projected Governmental Revenues – Base Development Scenario

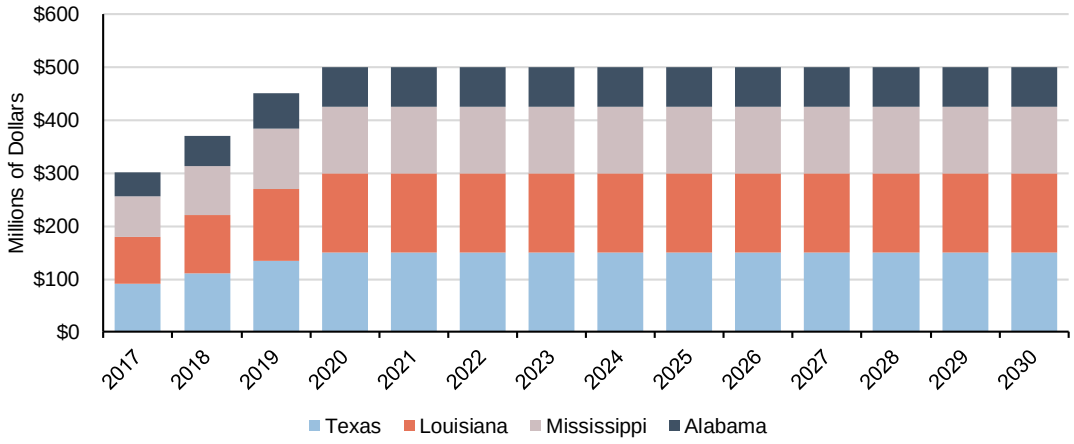


Source: Calash

Under the proposed modifications and revocations scenario, projected government revenues are projected to be around 23 percent lower, at $6.4 billion per year on average compared to $8.4 billion on average in the base case. Over the forecast period of 2017 to 2030, cumulative government revenues are projected to be around $90 billion in the proposed modifications and revocations scenario, compared to around $117 billion in the base case scenario.

State and Federal governments share in the revenue from Gulf of Mexico oil and natural gas development. Under the Gulf of Mexico Energy Security Act of 2006 (GOMESA) and implementing regulations, Gulf of Mexico offshore revenues are split between state and federal governments. The second phase of GOMESA will take effect in 2017, which includes a split of approximately 62.5% to 37.5% between state and federal governments with revenue capping provisions at $500 million for states. In the base scenario, combined state revenues are projected to reach this cap by 2020. (Figure 11)

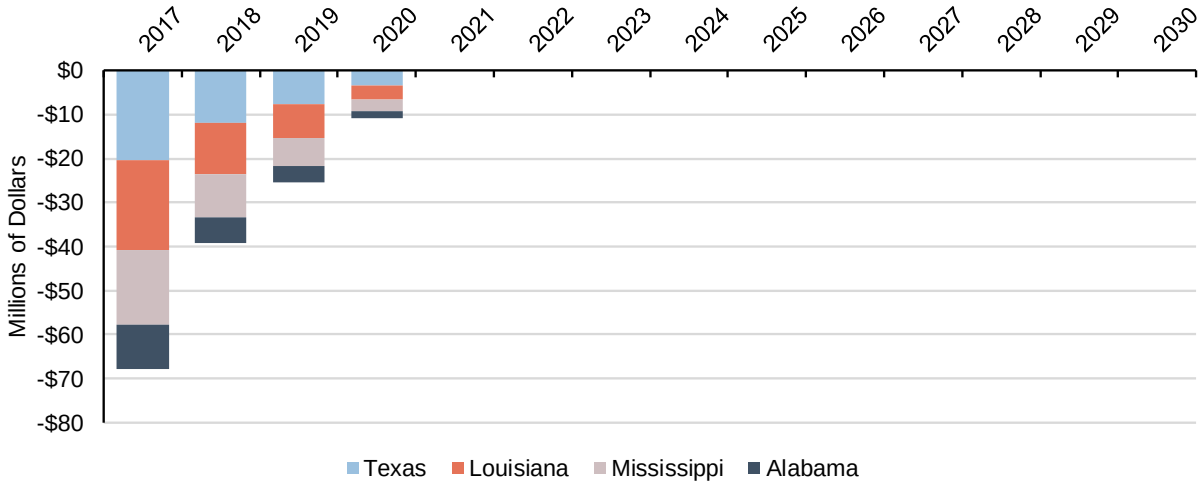
Figure 11: Projected State Revenues – Base Development Scenario



Source: Calash

In the proposed modifications and revocation scenario, state revenues are projected to reach the $500 million cap in 2021, with cumulative lost revenue to states of over $140 million. Under the proposed modifications and revocations scenario, both Texas and Louisiana are projected to lose a total of around $43 million in total revenue while Mississippi is projected to lose nearly $36 million in total revenue and Alabama is projected to lose around $21 million in total revenue.

Figure 12: Projected Lost Revenue by State – Proposed Modifications and Revocations Scenario



Source: Calash

After 2021, state revenues are projected to be $500 million per year in both scenarios due to revenue caps, however any changes to revenue sharing legislation which increases the share of potential state revenues would likely increase lost state revenues due to the proposed revocations and modifications.

Section 5 – Conclusions

The oil and natural gas industry in the Gulf of Mexico has provided longstanding contributions to the economies of the Gulf coast states and the broader U.S., supporting hundreds of thousands of American jobs, providing revenues to many levels of the U.S. government and contributing to domestic energy production. Despite currently depressed activity levels due to low oil prices, the region is currently producing near record levels of oil and natural gas. Assuming that oil prices begin to stabilize and increase, activity levels are also projected to increase leading to an upward trend in spending and employment.

While some of the proposed modifications and revocations to Jones Act rulings are projected to have minimal impacts on U.S. OCS activity, the study concludes that others will, in their current forms, seriously limit the ability of operators, installation contractors, and service providers to safely, effectively, and economically operate in U.S. offshore areas, as well as decrease the domestic U.S. content of equipment and services used in offshore oil and natural gas activities. This decrease in activity and U.S. content would further damage an important industry that is already dealing with the repercussions of a volatile and challenging commodity price environment and may seriously impact the overall U.S. economy.

After analyzing the operational and economic impacts of the proposed modifications and revocations, as currently proposed by Customs and Border Protection, this study has projected that the following effects may result from their implementation:

- Delays in projects currently under development but not installed due to an inability to utilize foreign flagged vessels.
- Decreased development activity due to increased costs and risk profiles of offshore oil and natural gas projects.
- Decreased U.S. domestic content due to offshoring of certain parts of the supply chain such as reeling of pipe, manufacturing of umbilicals and some subsea equipment and fabrication of topsides and modules.
- Between 2017 and 2030, decreased Gulf of Mexico offshore oil and natural gas spending in the range of $5.4 billion on average per year.
- An average reduction in oil and natural gas production in the range of 0.5 Million Barrels per day from 2017 to 2030.
- A loss of up to 30 thousand jobs in 2017 and average decreased employment of over 80 thousand jobs from 2017 to 2030.
- An average loss of more than $4.3 billion of GDP from 2017 to 2030.

- An average loss of more than $1.9 billion of government revenue per year from 2017 to 2030.
- The adoption of the proposed modifications and revocations to Jones Act rulings are projected to lead to reduced activity, spending, GDP, government revenue, domestic U.S. content, and employment that is due to the offshore oil and natural gas industry in the U.S.

Section 6 – Appendices

6.1 Extended Methodology Appendix

General Methodology

Calash's methodology focused on constructing a tiered "bottom-up" model that separated the complete life cycle of offshore operations and subsequent effects into four main categories – these categories are further developed into cases and presented as the base scenario and proposed modifications and revocations scenario within the paper. The four main categories are as follows;

- A "Proposed Modifications and Revocations" model that independently assesses the individual or combined effects of the proposed changes to Jones Act rulings affecting offshore oil and natural gas support activities
- An "Activity Forecast" model assessing Calash's projects and project modeling information under which the number of expected projects is developed
- A "Spending" model based on the requirements of developing projects within the "Activity Forecast"
- An "Economic" model focusing on the economic impact on employment and government revenue from the "Spending" model.

Three (Activity Forecast, Spending, and Economic models) of the four individual subsections were further split into five additional criteria that create an individual "Project" model. These categories include seismic, leasing activity, drilling, infrastructure & project development, and production & operation.

In order to estimate the economic effects and project activity losses through the "Project" model, additional analysis was undertaken to understand which projects would be disrupted due to delays and changes to project economics and risk profiles. This was presented through additional analysis of the Base Development scenario and is provided as the Proposed Modifications and Revocations scenario.

Project Development Methodology

In order to account for both currently active projects within the Gulf of Mexico and longer-term prospects that will be developed towards the end of the forecast period into the study's project development activity, Calash incorporated two models into the project development forecast. The near-term activity was developed on known projects or prospects currently under consideration for development, while a longer-term forecast was developed on top of the near-

term forecast through the analysis of reserves, oil prices, leasing trends, development trends, historic project sizes and other relevant factors.

Longer term projects were developed by applying historical and current trends within the region to future developments based on undiscovered oil and natural gas resources in order to apply the proper costs and timelines to the expected activity. Projects were still delineated by individual timelines and the development scenarios that may be expected of future activity within the region, but were calculated using assumptions on industry trends in production methods instead of on confirmed aspects of the specific projects.

With regards to the Proposed Modifications and Revocations scenario, projects were examined for potential hurdles that would be encountered under the proposed changes through several criteria identified from Calash's research. These were focused on how changes to the regulations affected specific vessels and how these changes would affect specific aspects of project development. These identified factors drove the forecasted possibility of delays or lost activity due to contracting and operational issues, project economics and changing risk profiles.

Project Spending Methodology

This spending analysis accounts for all capital investment and operational spending through the entire "life cycle" of operations. Every offshore oil or natural gas project must go through a series of steps in order to be developed. Initial expenditures necessary to identify targets and estimate the potential recoverable resources in place include seismic surveys (G&G) and the drilling and evaluation of exploration & appraisal (E&A) wells. For projects that are commercially viable, the full range of above-surface and below-water (subsea) equipment must be designed and purchased. Offshore equipment includes production platforms and on-site processing facilities, as well as below-water equipment generally referred to as SURF (Subsea, Umbilicals, Risers and Flowlines). Finally, the equipment must be installed and additional development wells must be drilled. Once under production, further operational expenditures (OPEX) are required to perform ongoing maintenance, production operations and other life extension activities as necessary for continued field production and optimization.

Spending for individual projects was subdivided into sixteen categories covering the complete life cycle of a single offshore project, as well as two additional groups for natural gas processing and operation. Timing and cost for individual categories were assigned based on the previously mentioned project types where prices are scaled according to the complexity and size of the project.

Additional spending due to increased vessel construction activity as a result of the proposed modifications and revocations was also included, based on a standalone analysis of likely new buildings of offshore construction vessels as a result of the proposed changes.

Upon compiling the scenario of overall spending estimates, Calash deconstructed the "local content" of oil and natural gas operations within the studied region. Individual tasks were analyzed on a component-by-component basis to provide an estimate of the percentage of regional, national, and international construction required by offshore operations. Additionally, delineations were made at the regional level in order to project spending for individual states. Considerations were based on current oil and natural gas development, the proximity to reserves and production, strategic locations such as shore bases and ports, as well as Bureau of Economic Analysis (BEA) data pertaining to each state's present economic distribution. For the Proposed Modifications and Revocations Scenario, these distributions were modified to account for likely changes to the offshore oil and natural gas supply chain as a result of the proposed changes including offshoring of work to other countries and increased U.S. domestic installation content.

Economic Methodology

The study's GDP and job data were calculated using the BEA's RIMs II Model providing an input-output multiplier on spending at the industry and state levels for each defined category. Model outputs considered from spending effects include number of jobs and GDP multiplier effects. Further delineation is presented in the form of direct and indirect and induced job numbers, which encompass the number of jobs relating to the spending in that category versus indirect and induced jobs that are created from pass-through spending. For states considered within the study that contained no RIMs II multipliers for specific sectors, state multipliers from economies that most closely paralleled those in question were replicated.

Rims Categories used:

- Architectural, Engineering, and Related Services
- Construction
- Drilling Oil and Gas Wells
- Fabricated Metal Product Manufacturing
- Mining and Oil and Gas Field Machinery Manufacturing
- Oil and Gas Extraction
- Steel Product Manufacturing from Purchased Steel
- Support Activities for Oil and Gas Operations

Governmental Revenue Development

Governmental revenue data is presented in three categories bonus bids from lease sales, rents from purchased but not yet developed leases, and royalty payments from producing leases. The projected revenue was calculated under the assumption that the current operating structure of the Gulf of Mexico would remain in place where applicable. Lease sales and rental rates were calculated through the simulation of yearly lease sales within each individual area, while the number of leases acquired was modeled on oil price forecasts, historical rates, and on the estimated amount of reserves in the western and central OCS regions.

The federal / state government revenue split of leases, rents and royalties were modeled under the application of GOMESA (Gulf of Mexico Energy Security Act). As Calash understands the rule and phase II beginning in 2017, GOMESA regulations would effectively split 37.5 percent of OCS bonus bid, rent, and royalty income between the appropriate states. GOMESA has an annual revenue cap of $500 million for the Gulf States.

Production pricing were calculated using the EIA estimates for both West Texas Intermediate (WTI) spot and Henry Hub natural gas prices[7]. Additional governmental revenues such as income and corporate taxes were considered outside of the scope of this study, and are likely to provide additional government revenues throughout the studied period.

6.2 Glossary of Terms

Coastwise vessel – A vessel permitted to engage in Jones Act protected domestic trade between two or more coastwise points in the United States. Coastwise vessels are required to be U.S. built, crewed by U.S. Citizen mariners, U.S. owned, and issued a Coastwise Endorsement by the Coast Guard on the vessel's Certificate of Documentation

Gross Domestic Product (GDP) – The total dollar value of all goods and services produced over a specific time period

Gulf of Mexico Energy Security Act (GOMESA) – Act signed into law in 2006 which enhances OCS oil and natural gas leasing activities and revenue sharing in the Gulf of Mexico (GOM)

Lease Sales – Periodic sales of leases by the federal government to offshore areas for the purpose of developing oil, natural gas, and sulfur

Mobile Offshore Drilling Rig – A mobile vessel typically either a drillship or semi-submersible used for drilling offshore oil and natural gas wells

[7] Annual Energy Outlook 2017, Energy Information Administration

Module – A part of a topside structure which can typically be lifted independently before being integrated into a topside

Outer Continental Shelf (OCS) – the submerged lands, subsoil, and seabed, lying between the seaward extent of the States' jurisdiction and the seaward extent of Federal jurisdiction

Pipeline – A conduit of steel or flexible pipes used to transport oil, natural gas, or other fluids between a well and a production platform or to shore

Reel – A vertical or horizontal cylinder used to transport and install pipelines, cables and umbilicals

Rents – Ongoing rental income paid by leaseholders to the federal government to maintain offshore oil and natural gas leases

Riser – A pipeline used to convey fluids between a subsea and a surface facility

Royalties – Ongoing payments to the federal government by leaseholders based on the value of produced oil and natural gas

Spool Base – A facility on the coast used to weld and reel steel pipelines onto offshore construction vessels

Subsea Equipment – Seabed placed equipment used in the production of oil and natural gas

Topsides – The upper part of a fixed or floating platform used to process oil, natural gas, water and other fluids, control production, and house workers

Umbilical – A collection of cables, tubes, and hoses used to control, monitor and provide communications, chemicals, hydraulic and electrical power to subsea oil and natural gas wells

Warm Stacked – A mobile drilling unit that has been taken out of service or put into storage with a reduction in usage of onboard systems and reduced manning to maintain the unit

Plug and Abandonment – The placement of cement plugs in a depleted well along with other steps required by law required to abandon and remediate a well

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