Part III: Peer Review Report

by

Ani Katchova

CIE Independent Peer Review Report

On

Recommendations for Excessive-Share Limits in the Surfclam and Ocean Quahog Fisheries, prepared by Glenn Mitchell, Steven Peterson, and Robert Willig

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July 1, 2011

Executive Summary

A National Marines Fisheries Service Technical Group of Experts was assembled to give advice on the appropriate excessive share threshold for the Surfclam and Ocean Quahog (SCOQ) ITQ system. The report prepared by Mitchell, Peterson, and Willig provides background information on the SCOQ industry and recommendations on 1) the rule or process that can be used to set an excessive-share limit in terms of the maximum percentage of quota that can be owned or otherwise controlled by a single individual or entity; and 2) the application of this rule or process using available data to determine an appropriate excessive-share limit in the SCOQ ITQ system.

The NMFS technical group argues that the evidence they analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ fisheries. Using the Herfindahl-Hirschman index which is recommended for use in the Horizontal Merger Guidelines, it is found that the levels of concentration vary in the different sectors of the SCOQ industry: quota ownership, harvesting, and processing. The ownership of quota in the SCOQ fisheries is unconcentrated, but the use of quota is highly concentrated, both for harvesting and processing.

The excessive-share proposal is laid out as a series of seven steps. They consider the HHI index using non-SCOQ clams and fringe holders, and the rule of three-firms to ensure adequate competition. At the end, they propose a two-part cap at 30% for long-term quota holdings and 40-60% for short-term quota holdings. They also recommend that there be a mechanism for revealing information on quota prices, such an open auction process.

The proposed method developed by the NMFS technical group has several key strengths and weaknesses. One of the major strengths of the proposed method is that it follows the Horizontal Merger Guidelines for determining concentration and market power. Using the HHI for measuring market concentration strengthens the study as it makes the methods and results comparable across industries. The application of this method presents a problem if there is an uncertainty about the market size (imports, other relevant markets) due to lack of available data. An additional rule was suggested that at least three firms must be present to ensure sufficient competition. There is support in the literature for this rule, although it is somewhat arbitrary how this three-firm rule was introduced to their study.

The proposed excessive share cap percentages include a rather wide range (i.e. 40-60%) of acceptable excessive-share caps that a regulator will have to determine which specific number to use and enforce as an excessive-share cap. The cost associated with the implementation of an excessive-share cap as well as the cost of monitoring and enforcement will likely be substantial, which will also need to be explored.

The boundaries of relevant markets are set based on the ability of consumers to switch products when faced with a small but relevant price increase (the hypothetical monopolist test). In absence of reliable quantitative data, there needs to be an in-depth understanding of the industry,

major players, products, etc. Therefore, in order to apply an excessive-share cap correctly over time, the cap needs to be dynamically updated based on new information about substitutability and structural changes in the industry.

The analysis of the NMFS technical group is mostly focused on the output markets as opposed to the input markets. Since this approach is applied to a vertically-integrated industry with a small number of processors and vessels predominantly controlled by the processors, the exercise of monopsony power is of primary interest.

One of the major challenges for this approach is the instrument used to address the potential exercise of market power. The only instrument considered in their study is setting excessive-share cap for the ITQ holdings. More transparency and reliable data are needed for the ownership, transfers, and contracts for quotas.

The approach outlined by the NMFS technical group is generally applicable to other fisheries managed through catch shares. The 7 steps as described by the NMFS technical group are relevant for the establishment of ITQs with excessive-share cap in other fisheries, but it may not apply to fisheries without ITQs. It is necessary to analyze all available information and data about the new fishery to assess the similarity and differences with the SCOQ industry before applying this approach. Similar data constraints may be present for other industries as well.

The NMFS technical group study provides a good starting point in considering an excessive-share cap in the SCOQ clam industry. In my opinion, because of data limitations there is still not sufficient understanding of the market structure for this industry and the recommendations apply in a general sense. I would recommend several actions:

1. An open auction or other mechanisms to reveal quota prices and make the market for quota transfers liquid and transparent needs to be established.
2. More information can be collected from industry participants regarding market shares, major buyers of processed output, prices paid and received for claim inputs and outputs, etc.
3. Merger guidelines focus on market shares and price considerations but not on production cost efficiencies. Further studies can be done on the cost efficiencies of operating as large processors.
4. Further studies are needed on the monopsonization of the input markets. Monopsonization of the input market is a larger concern than monopolization of the output market.
5. The study only considered policies regarding excessive share of the ownership quota. Other instruments beyond excessive share cap should be investigated.
6. Monitoring and enforcement of the excessive share cap will need to be studied and implemented.

I. Background

A. Project Description

The Mid-Atlantic Fishery Management Council has been crafting Amendment 15 to the Surfclam and Ocean Quahog (SCOQ) Fishery Management Plan, and as part of the Amendment, has been attempting to define an "excessive share" threshold for the Individual Transferable Quota (ITQ) portion of the fishery. Regarding share accumulation, the 2006 reauthorized Magnuson-Stevens Act states that ITQ privilege programs should ensure that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program. In addition, National Standard 4 of the Magnuson Act requires that fishing privilege allocations be carried out so that "no particular individual, corporation, or other entity acquires an excessive share of such privileges."

In order to provide this expertise, a NMFS Technical Group of Experts was assembled to give advice on the appropriate excessive share threshold for the Surfclam and Ocean Quahog ITQ system. This Technical Group assessed available models for evaluating the presence of market power, and made recommendations with regard to their appropriateness for setting excessive catch share limits.

After the Technical Group delivered its recommendations, a peer review (by the CIE) was conducted to either endorse or reject the findings from the Technical Group. This two-step process was agreed to by the Northeast Fisheries Science Center (NEFSC) and the Mid-Atlantic Fishery Management Council (MAFMC).

B. Brief Summary of Findings, of the Science, Conclusions and Recommendations of the Excessive-Share report by Mitchell, Peterson, and Willig.

The report prepared by Mitchell, Peterson, and Willig provides background information on the SCOQ industry as well as recommendations on 1) the rule or process that can be used to set an excessive-share limit in terms of the maximum percentage of quota that can be owned or otherwise controlled by a single individual or entity; and 2) the application of this rule or process using available data to determine an appropriate excessive-share limit in the SCOQ ITQ system.

In 1990, the SCOQ fisheries adopted an ITQ system under which the fishery regulator sets a total allowable catch (“TAC”) separately for each of the two species to prevent over-exploitation of the resource, and allocated ITQs permitting harvest of a share of the TAC. ITQs are transferable, which allows shifts in production to industry participants that may be more efficient.

Currently, there are eight processing firms that purchase catch from the SCOQ fisheries. Some processors have developed quota ownership through either the acquisition of vessels and

accompanying quota or the acquisition of quota directly, and it is common for processors to enter into long-term contracts to lease quota from quota holders. Virtually all clams are sold under contract between processors and harvesters, or are harvested by processor-affiliated vessels.

The Mitchell, Peterson, and Willig report addresses the question of whether market power can be exercised through the ownership and withholding of quota in the SCOQ fisheries. The exercise of market power in an ITQ-regulated fishery can occur when a quota owner has the ability and the incentive to affect the price of the regulated harvest or of the quota through its use or suppression of use of quota.

The authors argue that the evidence they analyzed does not support a conclusion that market power is currently being exercised through withholding of quota in the SCOQ fisheries. In particular, processors report that once it is clear that there will be excess quota available in a season (well before the end of the season, leaving sufficient opportunity to continue to harvest if harvesters and processors deem there to be sufficient demand), the price of quota is very low.

There are a number of factors that may constrain the exercise of market power throughout the various levels of activity in the SCOQ fisheries, including cases where the demand were highly elastic and substitutes were amply available.

Using the Herfindahl-Hirschman index which is recommended for use in the Horizontal Merger Guidelines, it is found that the levels of concentration vary in the different sectors of the SCOQ industry: quota ownership, harvesting, and processing. The ownership of quota in the SCOQ fisheries is unconcentrated, but the use of quota is highly concentrated, both for harvesting and processing.

The excessive-share proposal is laid out as a series of seven steps. They consider the HHI index using non-SCOQ clams and fringe holders, and the rule of three-firms to ensure adequate competition. At the end, they propose a two-part cap at 30% for long-term quota holdings and 40-60% for short-term quota holdings.

They also recommend that there be a mechanism for revealing information on quota prices, such as through an open auction process.

II. Description of the Individual Reviewer's Role in the Review Activities

This report was prepared and written by Dr. Ani Katchova. Before the panel meeting, I carefully read the "Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2011, 2012, and 2013" prepared by the Mid-Atlantic Fishery Management Council with the cooperation of National Marine Fisheries Service and the "Recommendations for Excessive-Share Limits in the Surfclam and Ocean Quahog Industries" prepared by Mitchell, Peterson, and Willig. Additional preparation included reading relevant publications on competition, market

power, and fisheries. During the panel meeting in Woods Hole, Massachusetts, June 21-23, 2011, I listened to the information presented and asked questions to clarify my understanding of the report and the fisheries industry. Following the review panel meeting, I prepared this report, according to the Terms of Reference and Statement of Work.

III. Summary of Findings for Each Term of Reference with Description of Strengths and Weaknesses

In this section, the five terms of reference are listed with a summary of findings for each of them. In the discussion, strengths and weaknesses are also discussed.

1. Describe the method or process used by the NMFS Technical Group for determining the maximum possible allowable percentage share of quota ownership that will prevent an entity from obtaining market power.

The NMFS Technical Group utilized a 7-step process to determine the maximum possible allowable percentage share of quota ownership that will prevent an entity from obtaining market power. The following steps were proposed and implemented: step 1, determine what constitutes relevant quota ownership and control; step 2, assess the relevant markets, including substitutability of products and product heterogeneity, the relative bargaining power of buyers and sellers, and other competitive information; step 3, establish whether a threshold condition requiring no calculation of cap applies; step 4; establish the appropriate concentration thresholds using the Horizontal Merger Guidelines (to prevent the HHI from exceeding 2500 or have at least three processing firms); step 5, determine the relationship between the excessive share cap and market concentration, using the HHI index and information on substitute products and the size of competitive fringe; step 6, identify regulatory and practical constraints with regards to setting a fixed cap or two-part cap; and step 7, set the excessive-share cap with fixed cap at 30-40% or two-part cap of 30% for long-term and 40-60% for short-term.

2. Evaluate the strengths and weaknesses of the proposed method developed by the NMFS technical group for determining maximum possible allowable percentage share of quota ownership. Review and comment on the data requirements necessary for applying the proposed methods.

The proposed method developed by the NMFS technical group has several key strengths and weaknesses.

One of the major strengths of the proposed method is that it follows the Horizontal Merger Guidelines for determining concentration and market power. The standard measure of concentration is the Herfindahl-Hirschman Index (HHI), where markets with an HHI below 1500 are considered unconcentrated; between 1500 and 2500, moderately concentrated; and above 2500, highly concentrated. Using the HHI for measuring market concentration strengthens the

study as it makes the methods and results comparable across industries. The NMFS technical group has appropriately modified the application of the HHI index to consider competition from non-SCOQ clams as well as the aggregate share held by fringe holders. To properly calculate HHI, the necessary data requirements include the market size of the relevant markets (imports, non-SCOQ clams, etc.) and the market shares of the players (for quota ownership, harvesting, and processing). Therefore, the application of this method presents a problem if there is an uncertainty about the market size (imports, state fisheries, other relevant markets) due to lack of available data. An additional rule was suggested that at least 3 firms must be present to ensure sufficient competition. There is support in the literature for this rule (Kwoka; Bresnahan and Reiss), although it is somewhat arbitrary how this three-firm rule was introduced to this study. The NMFS technical group argues that if the excessive share cap is set at 40% that will ensure that at least three firms are present in the industry. It is not clear which rule should be followed (HHI index below 2500 or the three-firm rule) if they reach different conclusions. Finally, the proposed excessive share cap percentages include a rather wide range (i.e. 40-60%) of acceptable excessive-share caps from which a regulator will have to determine which specific number to use and enforce as an excessive-share cap.

The boundaries of relevant markets are set based on the ability of consumers to switch products when faced with a small but relevant price increase (the hypothetical monopolist test). In order to apply the hypothetical monopolist test, there needs to be reliable data on quantities and prices demanded, which are not available for this application. In the absence of reliable quantitative data, there needs to be an in-depth understanding of the industry, major players, products, etc. Moreover, the substitutability of products is generally increasing over time, the demand for products is getting more elastic, and there are substantial income effects. Therefore, in order to apply an excessive-share cap correctly over time, it needs to be dynamically updated based on new information about substitutability and structural changes in the industry. In addition, the HHI is applicable for homogenous products as opposed to differentiated products, and there needs to be qualitative data available regarding whether the processors produce homogenous products or their products are differentiated. While the theoretical considerations are solid, these methods will be hard to apply if appropriate data are not available.

The analysis of the NMFS technical group is focused mostly on the output markets as opposed to the input markets. While their study directly follows the Horizontal Merger Guidelines and provides comparison with other industries, the analysis in this industry must focus on monopsonizing of the input markets. Since this approach is applied to a vertically-integrated industry with a small number of processors and vessels predominantly controlled by the processors, the exercise of monopsony power is of primary interest. Ideally, the hypothetical monopolist test should be modified and used for the input markets. For example, if prices of SCOQ clams go down, can a harvester deliver the clams to another processor? The condition of TAC not binding and quota prices of zero are also consistent with a monopsony scenario which

is not explored by the NMFS technical group. The question is if the pre-conditions for monopsony exist in this market, does the introduction of ITQs facilitate this process?

One of the major challenges for this approach is the instrument used to address the potential exercise of market power. The only instrument considered in their study is by setting an excessive-share cap for the ITQ holdings. Ultimately, the regulator should be concerned about the market shares of actual processed output by the processors. The real challenge is that quota holdings are only an approximation for the market concentration for the processors, as quota holdings may be owned or controlled by entities other than the processors. In general, and in this market in particular, it is very hard to determine control as opposed to ownership of the quota based on affiliations of entities. More transparency and reliable data are needed for the ownership, transfers, and contracts for quotas.

The proposed methods are applicable to a wide-range of industries, but additional considerations are needed on how ITQs affect the market concentration and power so that this method can be generally applied to this and other fisheries. For example, how will the proposed method be modified if the quota prices are of significant value, perhaps indicating the exercise of market power when TAC is not binding? What if the TAC were binding?

In addition, reliable data on quota prices are needed to implement the proposed method, and such data are currently not available or reliable. The establishment of an auction or other mechanism of revealing quota prices and providing volume and liquidity to the market is needed. Further studies will need to be conducted to determine the appropriate mechanism for revealing quota prices in this fishery.

One of the key arguments of the NMFS technical group is that because the quota price is currently close to zero and there are quotas available for trading at this price, there is no market power. However, this scenario is also consistent with a situation where the input market (harvesting) is monopsonized, as processors have constrained their output by exercising monopsony power.

There are other measurements that can be used to measure market power, such as examining the profit margins. For these measurements, detailed data on output prices and input costs will need to be available, which will likely not be the case. When data are available, such as the SCOQ price data used in the report, these data are aggregated and comingled, which makes them unreliable.

The social costs and benefits of market power, including efficiencies in processing, are mentioned but due to lack of data, they are not considered in detail. The cost associated with the implementation of an excessive-share cap as well as monitoring and enforcement will likely be substantial, which will also need to be explored.

3. **Evaluate application of the proposed methods to the Surfclam/Ocean Quahog ITQ fishery. If there is disagreement with what the NMFS Technical Group recommended, clearly state that and your reason why.**

The application of the proposed methods to the Surfclam/Ocean Quahog ITQ fishery includes several steps. One of the steps includes analyzing the HHI index for quota ownership, harvesting, and processing. The results show that quota ownership is unconcentrated, while harvesting and processing are highly concentrated. The HHI index and the three-firm rule are used to recommend the two-part excessive-share cap for quota ownership. The NMFS have done the best possible analysis given the substantial problems related to data limitations and availability.

The application needs to take into account the specific structure of the industry. This industry has been in existence for a number of years and a market structure already exists. The use of HHI is a rather general approach for determining market concentration that might not be specific enough for markets with ITQs. The NMFS technical group relies heavily on the fact that quota prices are currently close to zero. More transparency is needed for the quota prices. The report does not explain how different quota prices may affect the recommendations.

The study uses well-established methods to determine market concentrations based on HHI and make recommendations regarding an excessive-share cap. The lack of adequate data is a major problem when applying the proposed methods. There is a considerable uncertainty with regards to the size of the market (imports, fringe holders) and market shares of the participants. To the extent that the recommendations are based on general guidelines (such as having at least three firms in the industry and the HHI index is below 2500), the specific numbers recommended for the excessive-share cap may change significantly based on the continuously updated information about market size, market share of participants, etc.

Determining the relevant markets is another challenge in the application of the proposed methods. The information on substitutability of products and the elasticity of demand is limited and therefore the recommendations are largely based on anecdotal data. The ability to exercise market power is significantly influenced by these factors, yet because of lack of data, this analysis was not performed.

The HHI index of the quota owners/holders shows that the market is unconcentrated, but data are not available on quota ownership and control following quota transfers and the ownership relations among final quota holders. Therefore, the results that quota ownership and control are unconcentrated are not very reliable (better reporting of quota transfer data and contracting is needed). The correct determination of post-transfer quota ownership and control is extremely important in the implementation, monitoring, and enforcing of the excessive-share cap.

There is a rather wide range (i.e. 40-60% for short-term holdings) of acceptable excessive-share caps that are recommended. A regulator will have to determine which specific number to use

and enforce as an excessive-share cap. Given the data limitations on market size, substitutability of products, quota ownership, I view these recommendations as general guidelines (perhaps even as lower bounds) for setting an excessive-share cap.

4. **Evaluate whether the approach outlined by the NMFS Technical group is reasonable for setting excessive share limits in fisheries managed through catch shares? As part of this TOR, comment on any constraints that may hinder application of the methods proposed by the NMFS Technical group.**

The approach outlined by the NMFS technical group is generally applicable to other fisheries managed through catch shares. The 7 steps as described by the NMFS technical group are relevant for the establishment of ITQs with excessive-share cap in other fisheries, but it may not apply to fisheries without ITQs. One of the constraints in the application of their methods is that every fishery has a path-dependent history, with the size of market, major players, and the structure of industry already being historically determined. This approach can be applied to fisheries to set ITQs and simultaneously determine an excessive-share cap.

It is necessary to analyze all available information and data about the new fishery to assess the similarity and differences with the SCOQ industry before applying this approach. Several factors are very important to take into consideration when applying these methods to other fisheries. These factors include: whether or not the TAC is binding, whether or not the quota prices are transparent and are of significant value, the determination of relevant markets and substitutability with other products, whether ITQ are assigned to vessel owners or not, etc.

Similar data constraints may be available for other industries as well. These include: the transparency of quota prices, the determination of quota ownership and control, the determination of the market size, the determination of relevant markets, etc.

5. **Provide any recommendations for further improvement (of methods).**

The NMFS technical group study provides a good starting point in considering an excessive-share cap in the SCOQ clam industry. In my opinion, because of data limitations there is still not sufficient understanding of the market structure for this industry and the recommendations apply in a general sense. I would recommend several actions:

1. An open auction or other mechanisms to reveal quota prices and make the market for quota transfers liquid and transparent needs to be established.
2. More information can be collected from industry participants regarding market shares, major buyers of processed output, prices paid and received for claim inputs and outputs, etc. There needs to be a general description of all players from crew members to distributors.

3. Merger guidelines focus on market shares and price considerations but not on production cost efficiencies. Further studies can be done on the cost efficiencies of operating as large processors. Currently there are both large and small processors still operating in the industry but there are claims that processors need to be of certain size to achieve efficiency.
4. Further studies are needed on the monopsonization of the input markets. Monopsonization of the input markets is a larger concern than monopolization of the output market.
5. The study only considered policies regarding excessive share of the ownership quota. Other instruments beyond excessive share cap should be investigated.
6. Monitoring and enforcement of the excessive share cap will need to be studied and implemented.

IV. Conclusions and Recommendations in Accordance with the Terms of Reference

The NMFS Technical Group of Experts assessed available models for evaluating the presence of market power, and made recommendations with regard to their appropriateness for setting excessive catch share limits. The excessive-share proposal is laid out as a series of seven steps. They consider the HHI index using non-SCOQ clams and fringe holders, and the rule of three-firms to ensure adequate competition. At the end, they propose a two-part cap at 30% for long-term quota holdings and 40-60% for short-term quota holdings. They also recommend that there should be a mechanism for revealing information on quota prices, such as through an open auction process.

The NMFS technical group's proposed methods seem well grounded in the Horizontal Merger Guidelines, which ensures comparability with other industries. Their approach is also applicable to other fisheries with ITQs. The main challenge is with regards to the application of the proposed methods because of the lack of appropriate data on the size of the market, major participants and market shares, relevant markets, substitutability of products, and transparency of quota ownership and prices.

I have made several recommendations, including 1) facilitating an open auction or other mechanisms to reveal quota prices, 2) collecting more information from industry participants regarding market shares, major buyers of processed output, prices paid and received for claim inputs and outputs, etc., 3) studying production cost efficiencies for large processors, 4) studying the monopsonization of the input markets, 5) exploring other instruments to control market power in addition to an excessive-share cap of ownership quota, and 6) studying and implementation of the monitoring and enforcement of the excessive share cap.

Overall, the NMFS technical group's study is well executed and provided a good starting point in establishing an excessive-share cap in the Surfclam and Ocean Quahog fishery. The NMFS

should make any efforts to collect more detailed data in the future to aid to the understanding of this industry and the implication of the proposed methods.

Appendix 1: Bibliography of materials provided for review

Mid-Atlantic Fishery Management Council with the cooperation of National Marine Fisheries Service. “Overview of the Surfclam and Ocean Quahog Fisheries and Quota Considerations for 2011, 2012, and 2013.”

Glenn Mitchell, Steven Peterson, and Robert Willig. “Recommendations for Excessive-Share Limits in the Surfclam and Ocean Quahog Industries.” 2011.

Other documents discussed during the panel meeting:

Bresnahan, Timothy F. and Peter C. Reiss “Entry and Competition in Concentrated Markets” The Journal of Political Economy, Vol. 99, No. 5 (Oct., 1991), pp. 977-1009.

Kwoka, John E. Jr. “The Effect of Market Share Distribution on Industry Performance” The Review of Economics and Statistics, Vol. 61, No. 1 (Feb., 1979), pp. 101-109.

Appendix 2: A copy of the CIE Statement of Work

Attachment A: Statement of Work for Dr. Ani Katchova

External Independent Peer Review by the Center for Independent Experts

Evaluation of excessive shares study in the Mid-Atlantic surfclam and ocean quahog ITQ fishery

Scope of Work and CIE Process: The National Marine Fisheries Service's (NMFS) Office of Science and Technology coordinates and manages a contract providing external expertise through the Center for Independent Experts (CIE) to conduct independent peer reviews of NMFS scientific projects. The Statement of Work (SoW) described herein was established by the NMFS Project Contact and Contracting Officer's Technical Representative (COTR), and reviewed by CIE for compliance with their policy for providing independent expertise that can provide impartial and independent peer review without conflicts of interest. CIE reviewers are selected by the CIE Steering Committee and CIE Coordination Team to conduct the independent peer review of NMFS science in compliance the predetermined Terms of Reference (ToRs) of the peer review. Each CIE reviewer is contracted to deliver an independent peer review report to be approved by the CIE Steering Committee and the report is to be formatted with content requirements as specified in **Annex 1**. This SoW describes the work tasks and deliverables of the CIE reviewer for conducting an independent peer review of the following NMFS project. Further information on the CIE process can be obtained from www.ciereviews.org.

Project Description: Recently, the Mid-Atlantic Fishery Management Council has been crafting Amendment 15 to the Surfclam and Ocean Quahog Fishery Management Plan, and as part of the Amendment, has been attempting to define an "excessive share" threshold for the Individual Transferable Quota (ITQ) portion of the fishery. Regarding share accumulation, section 303A(c)(5)(D) of the 2006 reauthorized Magnuson-Stevens Act states that ITQ privilege programs should ensure that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program. In addition, National Standard 4 of the Magnuson Act (16 *U.S.C.* 1851(a)(4)) requires that fishing privilege allocations be carried out so that "no particular individual, corporation, or other entity acquires an excessive share of such privileges." During the course of the Council's deliberations on the market power excessive share issue, it was decided that additional expertise was needed to examine the economic rationale behind the excessive share determination, and to recommend an excessive share level, if needed. In order to provide this expertise, a Technical Group of Experts (not the CIE) is being assembled to give advice on the appropriate excessive share threshold for the surfclam and ocean quahog ITQ system. This Technical Group will assess available models for evaluating the presence of market power, and make recommendations with regard to their appropriateness for setting excessive catch share limits.

The work being performed by this Technical Group could be controversial. It will establish methods for determining excessive shares which might be applied in other fisheries (besides surfclams and ocean quahogs). With the movement by NMFS to catch share systems, determining what constitutes an excessive share and whether limits need to be put in place is

extremely important because excessive share may lead to market power. Market power can lead to the ability to influence price in either the final product market or for factors of production (i.e. the fish resource). Examination of market share has never been formally investigated in this fishery. Thus the study by the Technical Group will be innovative and significant.

After the Technical Group has delivered its recommendations, a peer review (by the CIE) needs to take place to either endorse or reject the findings from the Technical Group. This two-step process was agreed to by the Northeast Fisheries Science Center (NEFSC) and the Mid-Atlantic Fishery Management Council (MAFMC).

The Terms of Reference (ToRs) of the peer review are attached in **Annex 2**. The tentative agenda of the panel review meeting is attached in **Annex 3**.

Requirements for CIE Reviewers: Three CIE reviewers shall conduct an impartial and independent peer review in accordance with the SoW and ToRs herein. CIE reviewers shall have working knowledge and recent experience in the application of economics, with specific expertise in industrial organization. The reviewers should have theoretical and empirical expertise in the economics of market structure/conduct/performance, particularly monopoly/oligopsony, antitrust, firm strategy, and government regulation. Experience conducting studies using econometric models and/or index-based assessments of market concentration and market power would be useful. Experience with markets operating under government permits such as production permit or marketing orders in agriculture, bandwidth for TV and radio, and tradable permit systems like ITQ's in fisheries would be desirable. Empirical studies of market structure in renewable resource industries would be desirable as would an understanding of the statutory context for antitrust regulation. Each CIE reviewer's duties shall not exceed a maximum of 14 days to complete all work tasks of the peer review described herein.

Not covered by the CIE, the CIE chair's duties should not exceed a maximum of 14 days (i.e., several days prior to the meeting for document review; the CIE panel meeting in Woods Hole; several days following the open meeting for SARC Summary Report preparation).

Location of Peer Review: Each CIE reviewer shall conduct an independent peer review during the panel review meeting scheduled in Woods Hole, Massachusetts during 21-23 June 2011.

Statement of Tasks: Each CIE reviewer shall complete the following tasks in accordance with the SoW and Schedule of Milestones and Deliverables herein.

1. Prior to the Peer Review Meeting:

Upon completion of the CIE reviewer selection by the CIE Steering Committee, the CIE shall provide the CIE reviewer information (full name, title, affiliation, country, address, email, FAX) to the COTR, who forwards this information to the NMFS Project Contact no later the date specified in the Schedule of Milestones and Deliverables. The CIE is responsible for providing the SoW and ToRs to the CIE reviewers. The NMFS Project Contact is responsible for providing the CIE reviewers with the background documents, reports, foreign national security

clearance, and other information concerning pertinent meeting arrangements. The NMFS Project Contact is also responsible for providing the Chair (see below) a copy of the SoW, background documents and final report in advance of the panel review meeting. Any changes to the SoW or ToRs must be made through the COTR prior to the commencement of the peer review.

Foreign National Security Clearance: When CIE reviewers participate during a panel review meeting at a government facility, the NMFS Project Contact is responsible for obtaining the Foreign National Security Clearance approval for CIE reviewers who are non-US citizens. For this reason, the CIE reviewers shall provide requested information (e.g., first and last name, contact information, gender, birth date, passport number, country of passport, travel dates, country of citizenship, country of current residence, home country, and FAX number) to the NMFS Project Contact for the purpose of their security clearance, and this information shall be submitted at least 30 days before the peer review in accordance with the NOAA Deemed Export Technology Control Program NAO 207-12 regulations available at the Deemed Exports NAO website: http://deemedexports.noaa.gov/sponsor.html).

Pre-review Background Documents: Approximately two weeks before the peer review, the NMFS Project Contact will send (by electronic mail or make available at an FTP site) to the CIE reviewers the necessary background information and reports for the peer review. In the case where the documents need to be mailed, the NMFS Project Contact will consult with the CIE Lead Coordinator on where to send documents. CIE reviewers are responsible only for the pre-review documents that are delivered to the reviewer in accordance to the SoW scheduled deadlines specified herein. The CIE reviewers shall read all documents in preparation for the peer review.

2. During the Open Meeting

Panel Review Meeting: Each CIE reviewer shall conduct the independent peer review in accordance with the SoW and ToRs, and shall not serve in any other role unless specified herein. **Modifications to the SoW and ToRs can not be made during the peer review, and any SoW or ToRs modifications prior to the peer review shall be approved by the COTR and CIE Lead Coordinator.** Each CIE reviewer shall actively participate in a professional and respectful manner as a member of the meeting review panel, and their peer review tasks shall be focused on the ToRs as specified herein. The NMFS Project Contact is responsible for any facility arrangements (e.g., conference room for panel review meetings or teleconference arrangements). The NMFS Project Contact is responsible for ensuring that the Chair understands the contractual role of the CIE reviewers as specified herein. The CIE Lead Coordinator can contact the Project Contact to confirm any peer review arrangements, including the meeting facility arrangements.

(Review Meeting Chair)

A member of the Mid-Atlantic Management Council Scientific and Statistical Committee will serve as Chairperson. The role of the Chair is to facilitate the meeting, which includes coordination of presentations and discussions, and making sure all Terms of Reference are reviewed. Additionally, the Chair shall prepare the summary report from the meeting. During the

meeting the Chair can ask questions or make statements to clarify discussions, and he can move the discussion along to ensure that the CIE reviewers address all of the TORs.

(CIE Reviewers)

Each CIE reviewer shall participate as a peer reviewer in a panel discussion centered on a report furnished to NMFS by the Technical Group of Experts regarding excessive shares in the surfclam and ocean quahog fishery. Reviewers are to determine whether the findings of the Technical Group are valid given the Terms of Reference provided to the expert panel. If reviewers consider the recommendations of the expert panel to be inappropriate, the reviewers should recommend an alternative.

During the question and answer period, a representative of the NMFS expert panel will be available to answer questions about the report. The CIE members can provide feedback to the expert panel member at that time.

(Other Panel Members)

A representative from the Mid-Atlantic Fishery Management Council staff, and the Northeast Fisheries Science Center Social Sciences Branch will be available during the meeting to provide any additional information requested by the CIE reviewers. Other panel members may assist the Chair prepare the summary report, if requested.

3. After the Open Meeting

Contract Deliverables - Independent CIE Peer Review Reports: Each CIE reviewer shall complete an independent peer review report in accordance with the SoW. Each CIE reviewer shall complete the independent peer review according to required format and content as described in Annex 1. Each CIE reviewer shall complete the independent peer review addressing each ToR as described in Annex 2.

Other Tasks – Contribution to Summary Report: The Chair from the SSC and CIE reviewers will prepare the Peer Review Summary Report. Each CIE reviewer will discuss whether they hold similar views on each Term of Reference and whether their opinions can be summarized into a single conclusion for all or only for some of the Terms of Reference. For terms where a similar view can be reached, the Summary Report will contain a summary of such opinions. In cases where multiple and/or differing views exist on a given Term of Reference, the Report will note that there is no agreement and will specify - in a summary manner – what the different opinions are and the reason(s) for the difference in opinions.

The Chair's objective during this Summary Report development process will be to identify or facilitate the finding of an agreement rather than forcing the panel to reach an agreement. The Chair will take the lead in editing and completing this report. The Report (please see Annex 1 for information on contents) should address whether each Term of Reference was completed successfully. For each Term of Reference, this report should state why that Term of Reference was or was not completed successfully.

Specific Tasks for CIE Reviewers: The following chronological list of tasks shall be completed by each CIE reviewer in a timely manner as specified in the **Schedule of Milestones and Deliverables**.

1) Conduct necessary pre-review preparations, including the review of background material and reports provided by the NMFS Project Contact in advance of the peer review.
2) Participate during the panel review meeting at the Northeast Fisheries Science Center, Woods Hole, MA laboratory during 21-23 June, 2011 as specified herein, and conduct an independent peer review in accordance with the ToRs (**Annex 2**).
3) No later than 7 July, 2011, each CIE reviewer shall submit an independent peer review report addressed to the "Center for Independent Experts", and the report should be sent to Mr. Manoj Shivlani, CIE Lead Coordinator, via email to shivlanim@bellsouth.net, and Dr. David Sampson, CIE Regional Coordinator, via email to david.sampson@oregonstate.edu. Each CIE report shall be written using the format and content requirements specified in Annex 1, and address each ToR in **Annex 2**.

Schedule of Milestones and Deliverables: CIE shall complete the tasks and deliverables described in this SoW in accordance with the following schedule.

17 May 2011	CIE sends reviewer contact information to the COTR, who then sends this to the NMFS Project Contact
7 June 2011	NMFS Project Contact sends the CIE Reviewers the pre-review documents
21-23 June 2011	Each reviewer participates and conducts an independent peer review during the panel review meeting
7 July 2011	CIE reviewers submit draft CIE independent peer review reports to the CIE Lead Coordinator and CIE Regional Coordinator
14 July 2001	Draft of Summary Report, reviewed by all CIE reviewers, due to panel Chair *
21 July 2001	Panel Chair send final Summary Report, approved by CIE reviewers, to NEFSC contact
21 July 2011	CIE submits CIE reports to the COTR
28 July 2011	The COTR distributes the final CIE reports to the NMFS Project Contact and regional Center Director

*The Summary report will not be submitted, reviewed, or approved by the CIE

Modifications to the Statement of Work: Requests to modify this SoW must be approved by the Contracting Officer at least 15 working days prior to making any permanent substitutions.

The Contracting Officer will notify the COTR within 10 working days after receipt of all required information of the decision on substitutions. The COTR can approve changes to the milestone dates, list of pre-review documents, and ToRs within the SoW as long as the role and ability of the CIE reviewers to complete the deliverable in accordance with the SoW is not adversely impacted. The SoW and ToRs shall not be changed once the peer review has begun.

Acceptance of Deliverables: Upon review and acceptance of the CIE independent peer review reports by the CIE Lead Coordinator, Regional Coordinator, and Steering Committee, these reports shall be sent to the COTR for final approval as contract deliverables based on compliance with the SoW and ToRs. As specified in the Schedule of Milestones and Deliverables, the CIE shall send via e-mail the contract deliverables (CIE independent peer review reports) to the COTR (William Michaels, via William.Michaels@noaa.gov).

Applicable Performance Standards: The contract is successfully completed when the COTR provides final approval of the contract deliverables. The acceptance of the contract deliverables shall be based on three performance standards:
(1) each CIE report shall completed with the format and content in accordance with **Annex 1**,
(2) each CIE report shall address each ToR as specified in **Annex 2**,
(3) the CIE reports shall be delivered in a timely manner as specified in the schedule of milestones and deliverables.

Distribution of Approved Deliverables: Upon acceptance by the COTR, the CIE Lead Coordinator shall send via e-mail the final CIE reports in *.PDF format to the COTR. The COTR will distribute the CIE reports to the NMFS Project Contact and Center Director.

Support Personnel:

William Michaels, Program Manager, COTR)
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Roger W. Peretti, Executive Vice President
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Key Personnel:

NMFS Project Contact:

John B. Walden
Northeast Fisheries Science Center
166 Water Street, Woods Hole, MA 02536
John.Walden@noaa.gov

Phone: 508-495-2355

Annex 1: Format and Contents of CIE Independent Peer Review Report

1. The CIE independent report shall be prefaced with an Executive Summary providing a concise summary of the findings and recommendations in accordance with the ToRs.

2. The main body of the reviewer report shall consist of a Background, Description of the Individual Reviewer's Role in the Review Activities, Summary of Findings for each ToR in which the weaknesses and strengths are described, and Conclusions and Recommendations in accordance with the ToRs.

   a. Reviewers should describe in their own words the review activities completed during the panel review meeting, including providing a brief summary of findings, of the science, conclusions, and recommendations.

   b. Reviewers should discuss their independent views on each ToR even if these were consistent with those of other panelists, and especially where there were divergent views.

   c. Reviewers should elaborate on any points raised in the Summary Report that they feel might require further clarification.

   d. Reviewers shall provide a critique of the NMFS review process, including suggestions for improvements of both process and products.

   e. The CIE independent report shall be a stand-alone document for others to understand the weaknesses and strengths of the science reviewed, regardless of whether or not they read the summary report. The CIE independent report shall be an independent peer review of each ToRs, and shall not simply repeat the contents of the summary report.

3. The reviewer report shall include the following appendices:

   Appendix 1: Bibliography of materials provided for review
   Appendix 2: A copy of the CIE Statement of Work
   Appendix 3: Panel Membership or other pertinent information from the panel review meeting.

Annex 2: Terms of Reference for the Peer Review

Evaluation of excessive shares study in the Mid-Atlantic surfclam and ocean quahog ITQ fishery

The peer review shall be conducted based on the following Terms of Reference (ToRs):

1. Describe the method or process used by the NMFS Technical Group for determining the maximum possible allowable percentage share of quota ownership that will prevent an entity from obtaining market power.

2. Evaluate the strengths and weaknesses of the proposed method developed by the NMFS Technical group for determining maximum possible allowable percentage share of quota ownership. Review and comment on the data requirements necessary for applying the proposed methods.

3. Evaluate application of the proposed methods to the Surfclam/Ocean Quahog ITQ fishery. If there is disagreement with what the NMFS Technical Group recommended, clearly state that and your reason why.

4. Evaluate whether the approach outlined by the NMFS Technical group is reasonable for setting excessive share limits in fisheries managed through catch shares? As part of this TOR, comment on any constraints that may hinder application of the methods proposed by the NMFS Technical group.

5. Provide any recommendations for further improvement

Annex 3: Tentative Agenda
Evaluation of excessive shares study in the
Mid-Atlantic surfclam and ocean quahog ITQ fishery

Falmouth and Woods Hole, Massachusetts during 21-23 June 2011

<u>Tuesday, June 21</u>. Holiday Inn, Lighthouse Room, Jones Road, Falmouth, MA

9:00-9:15 AM
Opening
Welcome
Introduction SSC Chair
Agenda
Conduct of Meeting

9:15 – 9:30 Background and Need for Expert Panel Report – Lee Anderson

9:30-11 Report of the NMFS Expert Panel - NMFS Expert Panel Rep.

11-11:15 Break

11:15 -Noon Review Terms of Reference – CIE Panel

Noon – 1:15 Lunch

1:15 – 3:00 CIE Panel Discussion – Terms of Reference #1.

3:00-3:15 Break

3:15-4:00 Public Comments

4:00-4:45 CIE Panel Discussion – Terms of Reference #2

4:45-5:00 Questions for following day

<u>Wednesday, June 22.</u> Holiday Inn, Lighthouse Room, Jones Road, Falmouth, MA

9:00-9:30 Review any outstanding questions from previous day

9:30-10:30 CIE Panel Discussion – Terms of Reference #3

10:30-10:45 Break

10:45-Noon CIE Panel Discussion – Terms of Reference #4

Noon-1:30 Lunch

1:30 – 3:00 CIE Panel Discussion – Terms of Reference #5

3:00-3:15 Break

3:15-5:00 CIE Panel Discussion – Outstanding Issues

Thursday June 23 Location: Clark Conference Room, Northeast Fisheries Science Center.

9:00 – 5:00 Report writing (Meeting Closed to Public)

Appendix 3: Panel Membership or other pertinent information from the panel review meeting

The panel consisted of James Wilen (University of California at Davis), and three reviewers selected by the CIE: Rigoberto Lopez (University of Connecticut), Ragnar Arnanson (University of Iceland), and Ani Katchova (University of Kentucky). Glenn Mitchell and Steven Peterson were present for most of the panel meeting presenting information and answering questions. John Walden and Dale Squires were present at the panel review as well as panel discussion session to help with the review process and offer additional information when needed. Participants from the industry and various organizations were also present and offered comments/feedback.