

IPPTF Work Plan

Purpose

This work plan identifies the topics and timelines to further explore options to incorporate the cost of carbon dioxide into wholesale energy markets with the goal of contributing to achieving New York State's public policies, while providing the greatest benefits at the least cost to consumers and appropriate price signals to incentivize investment and maintain grid reliability.

Deliverables

The NYISO/New York State joint staff team¹ intends to present a carbon dioxide pricing proposal by December 2018. Alternatively, the NYISO / New York State joint staff team will present a detailed schedule by the end of December 2018 leading to a firm proposal date in early 2019 unless the NYISO / New York State joint staff team concludes that a viable proposal is not achievable and notifies the IPPTF.

Executive Summary

The work plan addresses five “Issue Tracks”. Recommendations from each Issue Track will be used to develop the proposal. Each Issue Track recommendation will include the rationale for the recommendations (it is anticipated that there may be multiple recommendations).

- **Issue Track 1: Straw Proposal Development:** how to price carbon into the wholesale energy markets.
- **Issue Track 2: Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes:** includes leakage, how to measure emissions rates, etc. as well as the interactions with NYISO processes and markets, such as the capacity market, credit implications, etc.
- **Issue Track 3: Policy Mechanics:** includes how the carbon dioxide emissions charge is set and who sets it, and how it could be modified in the future.
- **Issue Track 4: Interaction with Other State Policies and Programs:** This includes RGGI, VDER, REC/ZECs, etc.
- **Issue Track 5: Customer Impacts.**

The work plan also anticipates that additional analysis and data collection may be performed after the vetting of the issues.

¹ The NYISO/New York State joint staff team is comprised of New York Independent System Operation, New York Department of Public Service and New York State Energy Research and Development Authority staff.

Timeline

Review of the Issue Tracks will occur on parallel paths in the Integrating Public Policy Task Force (IPPTF). To accommodate all the work needed, the IPPTF will generally meet each week through 2018. To accommodate stakeholders who wish to participate in all the Issue Tracks but cannot attend all meetings, participation via phone and webcast will be available. Issue Track 1 (“straw proposal development”) will produce a straw proposal by the end of March 2018 to inform the other Issue Tracks. All Issue Tracks, including the finalization of recommendations, will conclude by the end of October 2018. The proposal, or a plan for achieving a proposal, will be issued by the end of December 2018.

A meeting will be held in mid-June 2018 to: i) review progress to date, ii) determine the schedule through the end of 2018, and iii) determine if any refinements to the 2018 deliverables are appropriate. The schedule may be adjusted as needed once discussions are underway.

All of the Issue Tracks will conclude by the end of October to allow stakeholders to comment on the issue tracks and recommendations prior to the NYISO / New York State presentation of a carbon dioxide pricing proposal by December 2018 (or of a detailed schedule by the end of December 2018 leading to a firm proposal date in early 2019 unless the NYISO / New York State joint staff team concludes that a viable proposal is not achievable and notifies the IPPTF).

Issue Tracks

Details on each Issue Track are available below². Note that there may be analysis or data that needs to be collected as part of the review of each issue. The work plan recognizes that additional analysis and data collection may be identified and performed after the work plan is drafted. The IPPTF stakeholder processes will encourage the full participation of stakeholders, including stakeholder presentations, but will not supplant or replace any existing NYISO or New York State stakeholder process.

Each Issue Track will seek to make progress across the issues in their track, finalizing recommendations on the individual issues as soon as suitable levels of information are gathered to enable them to do so.

Each Issue Track meeting will have an agenda including:

- topics covered and issues to be vetted in that meeting,
- review of new and open action items.

² Appendix A reflects stakeholder feedback on potential topics and questions for use by the different Issue Tracks. It does not pre-determine the topics that will ultimately be accommodated by each Issue Track; such determination will be made during the initial meetings of each Issue Track.

Each Issue Track meeting will also have a summary produced by the joint staff after the meeting.

This will identify:

- staff or stakeholder work that needs to be done for future Issue Track meetings,
- any other action items that need to be accomplished, and
- all open action items.

All Issue Tracks should aim to develop draft recommendations early, with the first such draft by August 1, recognizing that such drafts are likely to be incomplete and subject to change.

Issue Track 1: Straw Proposal Development

Issue Track 1 will focus on how to incorporate the cost of carbon dioxide into New York's wholesale energy markets, with the goal of contributing to achieving New York State's public policies while providing the greatest benefits at the least cost to consumers while also providing appropriate price signals to incentivize investment and maintain grid reliability. Initial discussions in the other issue tracks could address the pros and cons of the proposals discussed in this Issue Track.

Deliverable

A straw proposal for how to incorporate the cost of carbon dioxide into New York's wholesale electricity markets and the rationale for the recommendation. The deliverable will be one straw proposal that will then be worked through the subsequent tasks. The straw proposal will be developed by the joint staff team based on knowledge and evaluation of all existing alternate proposals provided to the joint staff team on or before Thursday, November 30, 2017 against the objectives in the Purpose section.

The joint staff team will develop one straw proposal that may include combining aspects of alternatives or adding new aspects based on the team's collective knowledge, and provide the supporting rationale, for evaluation in the other Issue Tracks. The straw proposal will include an outline of the additional analysis and/or comparisons that may be necessary to develop a full proposal. The use of one straw proposal will provide the joint staff team and IPPTF with a focus. Through the subsequent Issue Tracks the joint staff team will consider variations on the straw-proposal as the topics are discussed in Tracks 2, 3, 4, and 5.

Topic Areas

Review proposals or concepts for integrating carbon pricing into the wholesale energy market, which will further New York State's energy policy goals by harmonizing New York State policy and New York wholesale electricity markets and identify further analysis needed.

Schedule

This Issue Track will begin in early February and conclude with the delivery of a straw proposal by the end of March so that it may inform the other Issue Tracks.

Week of February 5 – Stakeholder presentations of alternate proposals and discussion of further analysis needed for Issue Track 5.

Week of March 5 – Review of and comments on the draft deliverable (straw proposal).

Week of March 19 – Finalized straw proposal posted.

TBA – Presentation of straw proposal and supporting rationale by the joint staff team.

Issue Track 2: Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes

Issue Track 2 will cover wholesale energy market topics including both how to implement pricing carbon in New York's wholesale markets while contributing to achieving New York State's public policies, how doing so could affect other wholesale market processes questions, and whether any modifications should be made to those processes. The wholesale energy market topics include but are not limited to: how to address leakage (geographic, cross sectoral and other sources), how to account for generator emissions rates, and how the carbon charge will be implemented.

Deliverable

Recommendations and implications for each topic covered by the Issue Track and the rationale for the recommendations.

Topic Areas

This wholesale energy market mechanics part of this issue track includes, but is not limited to, the following topics:

- Leakage (this includes Geographic Electric Leakage, Cross Sectoral Leakage and Other Sources of leakage)
- Emissions rates for generators
- Carbon shadow prices
- Carbon charge implementation
- Emissions rates for DER and DR
- Fuel Blends
- How carbon charge collections in the wholesale energy market would be allocated to wholesale customers

This interactions with other wholesale markets portion of this Issue Track includes, but is not limited to, the following topics:

- Credit Implications
- Capacity Market Implications
- Bilateral Arrangements

Schedule

This Issue Track will conclude and deliver recommendations by the end of October.

Week of February 12 – Set a schedule of topics and begin the first discussion of topics that apply to all proposals

Week of April 9 – continue discussion

Continuing approximately every 3 weeks unless modified in the mid-June meeting to review progress and set a schedule through October. Any meetings that are not needed will be canceled.

Issue Track 3: Policy Mechanics

This Issue Track includes only one topic area at this time: how a carbon charge would be set and adjusted. Additional policy mechanisms could be added, if necessary.

Deliverable

Recommendations and implications for each topic area covered by the Issue Track and the rationale for the recommendations.

Topic Areas

This issue track includes, but is not limited to, the following topic:

- Insights to guide the State's decision-making on setting the carbon charge and process for adjustments including consideration of if and how the carbon charge should vary to make it the most effective at achieving the Purpose above.

Schedule

This Issue Track will conclude and deliver recommendations by the end of October.

Week of February 26 – Set a schedule of topics and begin the first discussion of topics that apply to all proposals

Week of April 16 – continue discussion

Continuing approximately every 3 weeks unless modified in the mdi-June meeting to review progress and set a schedule through October.

Any meetings that are not needed will be canceled.

Issue Track 4: Interaction with Other State Policies and Programs

Within the Purpose above, this Issue Track focuses on the specific interactions with those New York State policies and programs, such as those behind the REC and ZEC program.

Deliverable

Identify potential impacts of pricing carbon in NYISO wholesale energy markets on New York State policies and programs; and the potential impacts of New York State policies and programs on the effectiveness of pricing carbon in NYISO wholesale energy markets. Recommendations and implications for each topic area covered by the Issue Track and the rationale for the recommendations.

Topic Areas

This issue track includes, but is not limited to, the following topics:

- Existing programs (for example, RECs, ZECs, RGGI, etc.)
- Retail programs (for example, VDER, Recharge NY, etc.)

Schedule

This Issue Track will conclude and deliver recommendations by the end of October.

Week of February 26 – Set a schedule of topics and begin the first discussion of topics that apply to all proposals

Week of April 16 – continue discussion

Continuing approximately every 3 weeks unless modified in the mid-June meeting to review progress and set a schedule through October.

Any meetings that are not needed will be canceled.

Issue Track 5: Customer Impacts

Issue Track 5 will focus on both wholesale and retail customer impacts and, therefore, also includes how any collections due to a carbon charge would be returned to retail customers.

Deliverable

Recommendations and implications for each topic area covered by the Issue Track and the rationale for the recommendations.

Topic Areas

This issue track includes:

- Insights to guide the State's decision-making on the allocation of the carbon charges to retail customers
- Wholesale customer impacts including regional impacts, and
- Retail customer impacts (and therefore how a wholesale carbon charge would be returned to customers), and
- Multiyear assessments and different scenarios which will be developed within this Issue Track.

Schedule

This Issue Track will conclude and deliver recommendations by the end of October.

Week of March 12 – Set a schedule of topics and begin the first discussion of topics that apply to all proposals

Week of April 23 – continue discussion

Continuing approximately every 3 weeks unless modified in the mid-June meeting to review progress and set a schedule through October.

Any meetings that are not needed will be canceled.

Summary of the anticipated IPPTF SCHEDULE 2018

Issue Tracks:

- Issue Track 1: Straw Proposal Development.
- Issue Track 2: Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes.
- Issue Track 3: Policy Mechanics.
- Issue Track 4: Interaction with Other State Policies and Programs.
- Issue Track 5: Customer Impacts.

Meeting Date	Topics
January 8	Review and comment on draft Plan UIU presentation
January 29	Release Work Plan
February 5	Issue Track 1: Stakeholder presentations on proposals
Feb 12	Issue Track 2: Schedule of topics and first discussion
Feb 19	No meeting (President’s Day)
Feb 26	Issue Track 3: Schedule of topics and first discussion Issue Track 4 Schedule of topics and first discussion
March 5	Issue Track 1: Review of, and comments on, the draft straw proposal
March 12	Issue Track 5: Schedule for topics and first discussion
March 19	TBD
Week of March 19	Issue Track 1: Finalized straw proposal posted
Date TBA	Issue Track 1: Presentation of straw proposal and supporting rationale.
April 2	No meeting this week
April 9	Issue Track 2
April 16	Issue Track 3 Issue Track 4
April 23	Issue Track 5

Issue Tracks 2 through 5 will continue on a similar pattern until a mid-June Meeting (Week of June 18) to review progress, to determine schedule through October, and to discuss any necessary changes to deliverables.

The rest of the year will continue on the pattern outlined above for Issue Tracks 2 through 5 (unless modified based on mid-June feedback).

In September or October, the NYISO / New York State joint staff team will present and comment on the draft deliverables for each Issue Track (could be sooner based on stakeholder discussions). Deliverables finalized by end of October for all Issue Tracks.

After all the issue tracks conclude, there will be another stakeholder comment period for comment on the Issue Tracks and recommendations. The comment period is expected to be November 1 through 15 but could be earlier if the Issue Tracks finish earlier than expected.

The NYISO / New York State joint staff team will review the Issue Track recommendations and stakeholder comments and intends to present a carbon dioxide pricing proposal in December 2018. Alternatively, the NYISO / New York State joint staff team will present a detailed schedule by the end of December 2018 leading to a firm proposal date in early 2019. Should the NYISO / New York State joint staff team conclude that a viable proposal is not achievable, the IPPTF would be notified and the work described in this work plan would cease.

Appendix 1: Potential detailed topics and questions

(Reflects stakeholder feedback received communicated at IPPTF meetings, via email and filings)

This draft list should not be considered complete or final. It is included to inform the proposed work plan and Issue Tracks and the topics listed have not been evaluated to determine if they are consistent with the purpose of the work plan.

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
1	Leakage & Resource Shuffling	<p>Geographic Electric Leakage</p> <ul style="list-style-type: none"> -How would a carbon charge be applied to interregional transactions? -Should specific charges be applied to each neighboring region, or should the same charge be applied to all neighboring regions? -Would crediting the carbon charge on exporting interregional transactions create incentive to sell power out-of-state? Will the biggest emitters see this as an incentive to export more energy from New York? -How are wheeling transactions (wheeling through NY) treated? -Interest in how there could be leakage by dirty generators leaving (would like data on that) -Are there unintended consequences of border charges? -What are the lesson learned in other jurisdictions/programs -Are border charges addressing the overall goal of reducing carbon dioxide? -What is the impact on RGGI? What changes are 			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
		<p>needed to RGGI? What does RGGI do to the effectiveness of this proposal? Should RGGI and non-RGGI states be addressed differently?</p> <ul style="list-style-type: none"> -What is the role of DPS on leakage? Is leakage policy a NYS policy? Does there need to be a state policy on leakage? Where does state policy end and wholesale markets begin? Whose policy is leakage? <p>Cross Sectoral Leakage</p> <ul style="list-style-type: none"> -Would a carbon charge shift carbon dioxide emissions to other sectors? (and vice versa) -Does this shift carbon dioxide <p>Other Sources Leakage (potentially, overlapping topics)</p> <ul style="list-style-type: none"> -<25MW units -BTM units -DR (bulk and/or distribution)/DER 			
2A	Allocation of Carbon Revenues-mechanics	<ul style="list-style-type: none"> -How should the carbon charge be returned to LSEs? -Are there any circumstances when the money should not be returned to the LSE? -Should the returned carbon charges be based on the impact to consumers in the LSE? -Should consumers within an LSE be seen as one block or is there a need for additional subsets 			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
2B	Allocation of Carbon Revenues- impacts	<p>-Can the carbon charge be returned in a way to minimize bill impacts and ensure that proper tradeoffs between economic sectors (<i>e.g.</i>, electricity, transportation, heat, waste) can be retained?</p> <p>-Should some or all the carbon charge be returned directly to end use consumers? Could it better be spent somewhere else? (On weatherization, energy efficiency programs, planting trees, investing in greater generator efficiency?)</p> <p>-What are the effect on consumption of how you return the charges to consumers is important (in second best assumptions) and should that impact how the money is returned?</p>		Related to 10	Impacts

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
3	Emission Rates for Generators	<ul style="list-style-type: none"> -What carbon charge calculation should be used? -Should the emissions rate be consistent with other state policies? -Should it use the same emission rate/measurement as the RGGI program? -Should emissions be measured at the burner tip or consider total carbon emissions? -Should a carbon charge only apply to resources greater than 25 MW (<i>i.e.</i>, similar to RGGI)? -Should emission rates use carbon scoring (based on lifecycle emissions) or just “burner tip” Carbon Dioxide emissions? /Should there be a “Carbon Score” that includes other greenhouse gas emissions? -How should fuel use during startup be accounted for? -Focus on measurement and verification 	Looking for more information about marginality and what is on the margin when		Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
4	Carbon shadow price	<ul style="list-style-type: none"> -Should the marginal cost of carbon be transparent? -Is NYCA wide sufficient or does there need to more granular information? - Cost of carbon (in \$/ton) vs the cost of carbon in the electric prices \$/kWh which will constantly vary 		Related to 5	Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
5	Carbon Charge Implementation	<ul style="list-style-type: none"> -Is there any benefit or detriment from applying the cost of carbon on the bid versus applying a carbon charge to emitting resources? -Based on estimated heat rate or based on emissions data? 		Related to 4	Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
6	Credit Implications	-Are changes to the NYISO's existing credit rules and processes necessary? If so, what changes may be necessary? -This is downstream from the proposal			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
7	Capacity Market Implications	-Are changes needed to the Capacity market to accommodate a carbon charge? -Would the demand curve reference point and the cost of new entry adjust and how? How does it impact energy and ancillary service revenues? - Is there an impact on buyer-side mitigation (and are changes needed)? -How to avoid overbuilding but still provide adequate resilience?			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
8	Bilateral Arrangements	- Are existing bilateral arrangements likely to be impacted? If so, what are the potential impacts? - Could bilateral arrangements be used to avoid the carbon charge? -Need to be able to prevent circumventing the carbon charge. Could it be done by charging all emitters regardless of contracts/sales)		Depends on 12	Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
9	Emission Rates for DER and DR	-How should the emissions from DER and DR sources be considered with respect to carbon charges? -Are there metered emissions? -How to count the emissions of cogeneration plants?			Wholesale Energy Market Mechanics & Wholesale Energy Market Mechanics

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
10	Bill Impacts on different Customers	<ul style="list-style-type: none"> -Upstate vs downstate impacts -Impact on economy sectors including industrial -Impact on fleet owners -Impact on transportation sector -Impact by zone -Impact on fleet composition (which generators are expected to leave) -Impact of different border charges on customer costs -impact on carbon abatement -Impacts on low income customers (& how are they impacted by revenue reallocation & reinvestment?) -Impact on decarbonization goals (transportation, heating) -How will imports/exports change -How does it impact ESCOs – don't want to pay twice -Want bill impacts that include all programs including infrastructure upgrades -Request to stay with first order price impacts and not secondary (etc.) impacts 	Is production cost modeling needed?	Related to 1	Customer Impacts

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
11	Carbon Charge Setting and Adjustment	<ul style="list-style-type: none"> -How is the carbon charge set & who sets it? -What is the process for modifying the carbon charge? -How frequently should it change? -Should the carbon charge be designed to vary by time of day, season and/or location? -What is the basis for setting the charge? Is it based on social cost of carbon? On the abatement costs? Etc. -A request for consistency across state policies 			Policy Mechanics
12	Impact of a Carbon Charge on dispatch	<ul style="list-style-type: none"> -Should additional analysis be conducted to evaluate the potential impact a carbon charge could have on dispatch? - The Brattle study did not sufficiently analyze redispatch. -Also did not address entry & exit -Depending on the policy may impact imports and exports. Need to keep that in mind. -Need to add transmission to the modeling and multiple years & optimistic/pessimistic. -Look at impact on investment. -Need scenarios -Detail vs big picture needs to be considered 	<ul style="list-style-type: none"> -Study? Ranger or other software? -Production cost modeling consider IPM & MAPS -how can we get to less than 1 hours (MAPS cannot) -Consider grid view for sub hourly 	Needed for 8	Customer Impacts

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
13	Other State Policies & existing programs related to carbon emissions	-What are the potential impacts on: <ul style="list-style-type: none"> ○ The existing REC and ZEC program(s)? ○ RGGI prices and allowances? - What coordination with RGGI might be necessary to eliminate the potential for leakage across the RGGI region? - How do future REC contracts need to change? - Concern about “protecting” existing REC contracts.			Interaction with Other State Policies and Programs
14	Fuel Blends	-Does the NYISO need more information about what fuel blend is being used?			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
15	Other Retail Programs	-How would a carbon charge impact the VDER rate? -How would a carbon charge impact retail DR? -Interaction with RGGI and RGGI changes -Impact on Recharge NY & Job Retention programs			Interaction with Other State Policies and Programs

#	Topic	What questions need to be addressed?	Methodologies, relevant existing and/or new research or studies	Sequencing and/or interrelationship with other topics	Issue Track
16	Alternatives and or alternate goals	<ul style="list-style-type: none"> -Focus on abatement costs. -request for loads to be able to take advantage of lower cost renewables -A request to focus on average emissions rates and not marginal emissions rates -NY State carbon tax, all sectors -NY Cap and Trade program -Bifurcated 2 tiered capacity markets -Dynamic forward clean energy market -Achieving goals through RGGI -CO2e reduction alternatives: cap landfills, electric vehicle incentives, etc. -Restructuring the CES incentives to fixed payments or payments based on availability. 			Straw Proposal Development
17	Evaluation of existing Carbon Dioxide abatement efforts	Request to evaluate where NY is now with respect to 1990 levels and what the existing programs will achieve	Refer to existing state analysis to support RECs and RGGI?		Customer Impacts
18	How much transparency is available?	<p>How much information is there to inform generators and consumers?</p> <p>Information about the characteristics of units on the margin (marginal emissions rate, fuel on the margin, technology on the margin, other?)</p>			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes
19	How this relates to transmission	<ul style="list-style-type: none"> -Should this impact the public policy transmission process? And if so, how? -Do the prices appropriately signal the need to new transmission? 			Wholesale Energy Market Mechanics & Interaction with Other Wholesale Market Processes