A Net Interchange Method
to allocate Cross-Border Economic Project
between MISO and PJM

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Submitted by

Exelon Corporation

Concepts of the Net Interchange Method

- Employ hourly net interchanges (economic import)
- Use of hourly economic import could be a simpler cost allocation approach
- Assign cost responsibility if an upgrade increases the economy import to a RTO
- Assign no cost responsibility if an upgrade decreases the economy import to a RTO
- Allocate cost based on the relative annual increases (MW-Hours) in the economy import of an RTO due to the upgrade

The key concept of the Net Interchange (NI) Method is that an increase in the economy import to an RTO due to an upgrade implies that the RTO is benefiting from the upgrade by importing more economic energy and the RTO should share the cost of the economic upgrade

Comparison to the Load Payment (LP) Method

- LP method allocates costs based on load payments savings
- Without the upgrade, load payments are higher due to higher LMPs and lower economic import
- With the upgrade, load payments decrease since LMPs are lower due to an increase in economic import
- LP and NI methods are similar since load payment savings implies an increase in import of economic energy
- Difference is that LP method allocates costs using dollar savings and NI method uses MW-hour import increases

Comparison to Generator Revenues (GR) Method

- GR method allocates costs based on reduction in annual payments to generators (adjusted for external sales/ purchases)
- Without the upgrade, generator revenues are higher since LMPs (more expensive generation) are higher and economic import is lower
- With the upgrade, generator revenues decrease since the LMPs are lower by an increase in economic import energy
- GR and NI methods are similar since lower generator revenues implies higher import levels
- Difference is that GR method allocates costs using dollar reduction and NI method uses MW-hour import increases

Comparison to Production Cost (PC) Method

- PC method allocates costs based on reduction in annual production costs (adjusted for external sales/purchases)
- Without the upgrade, production costs for the importing RTO are higher since higher cost generation are used and economic import is low
- With the upgrade, production costs for the importing RTO are lower due to an increase in economic import energy
- PC and NI methods are similar since lower production costs imply higher economic import
- Difference is that PC method allocates costs using dollar reduction and NI method uses MW-hours import increases

Observation

- For a two-RTO simulation, the importing RTO (the beneficiary) will bear the cost of the upgrade and the exporting RTO will not

- For a two-RTO simulation, NI, LP, GR and PC could yield identical results and assign 100% of the cost to the importing RTO

- Use of hourly economic import could be a simpler cost allocation approach

Observation

- In a 3-RTO (MISO/RTO/World) situation, power can be routed from one RTO to another via a third party but the RTO benefiting from the economic upgrade should realize an increase in economic import and should share the cost responsibility

- If both MISO and PJM realize an increase in economic import, MISO and PJM should share the cost using the relative MW-hour import increases

- If only the economic import in the World increases, the economic upgrade should not be built since it benefits neither MISO nor PJM unless the World wants to pay for it.