

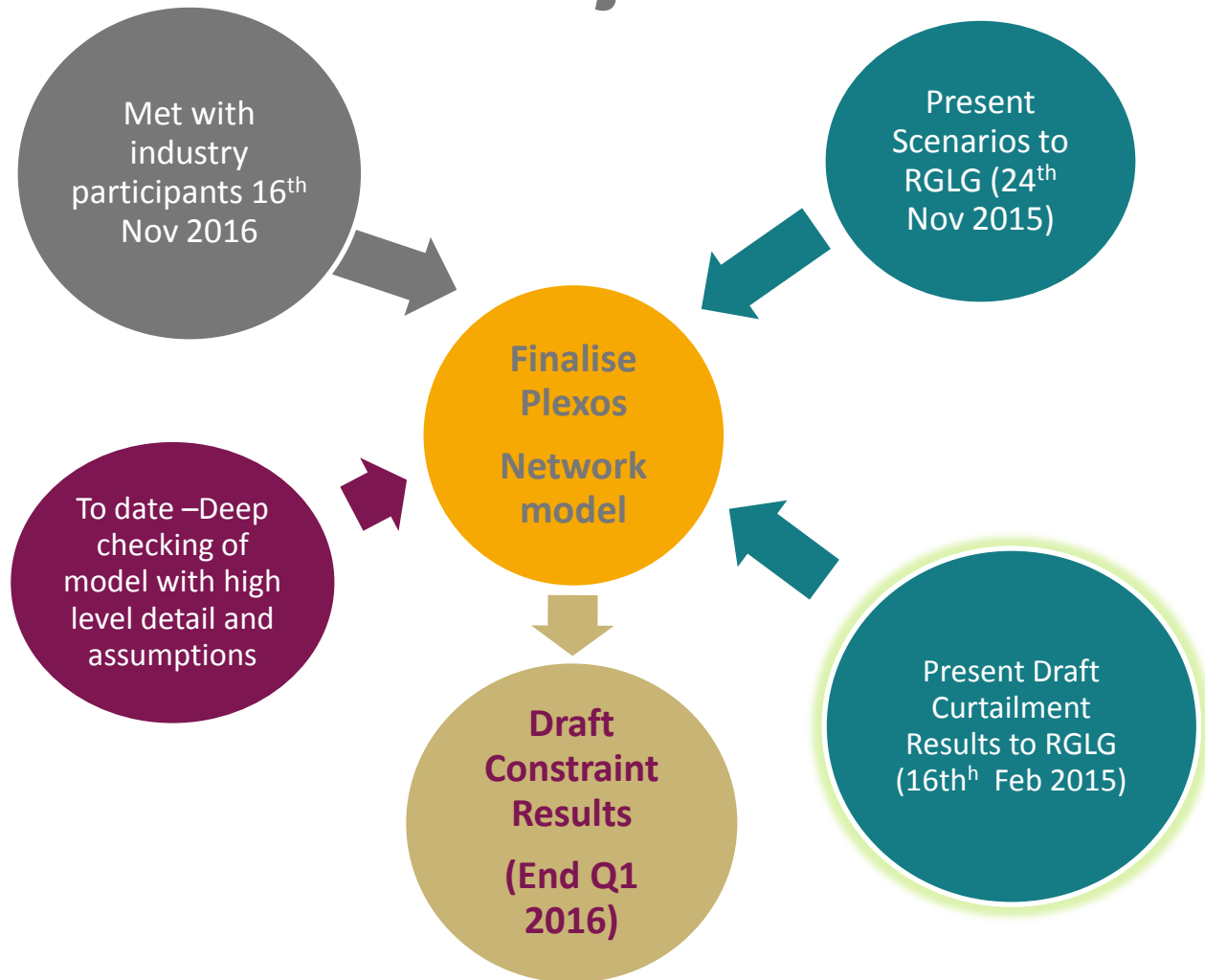
Northern Ireland Constraints Report 2016-2024 Progress Update

16th February 2015

Energy Systems Analysis

Philip O'Donnell, David McGowan, Andrew Gordon

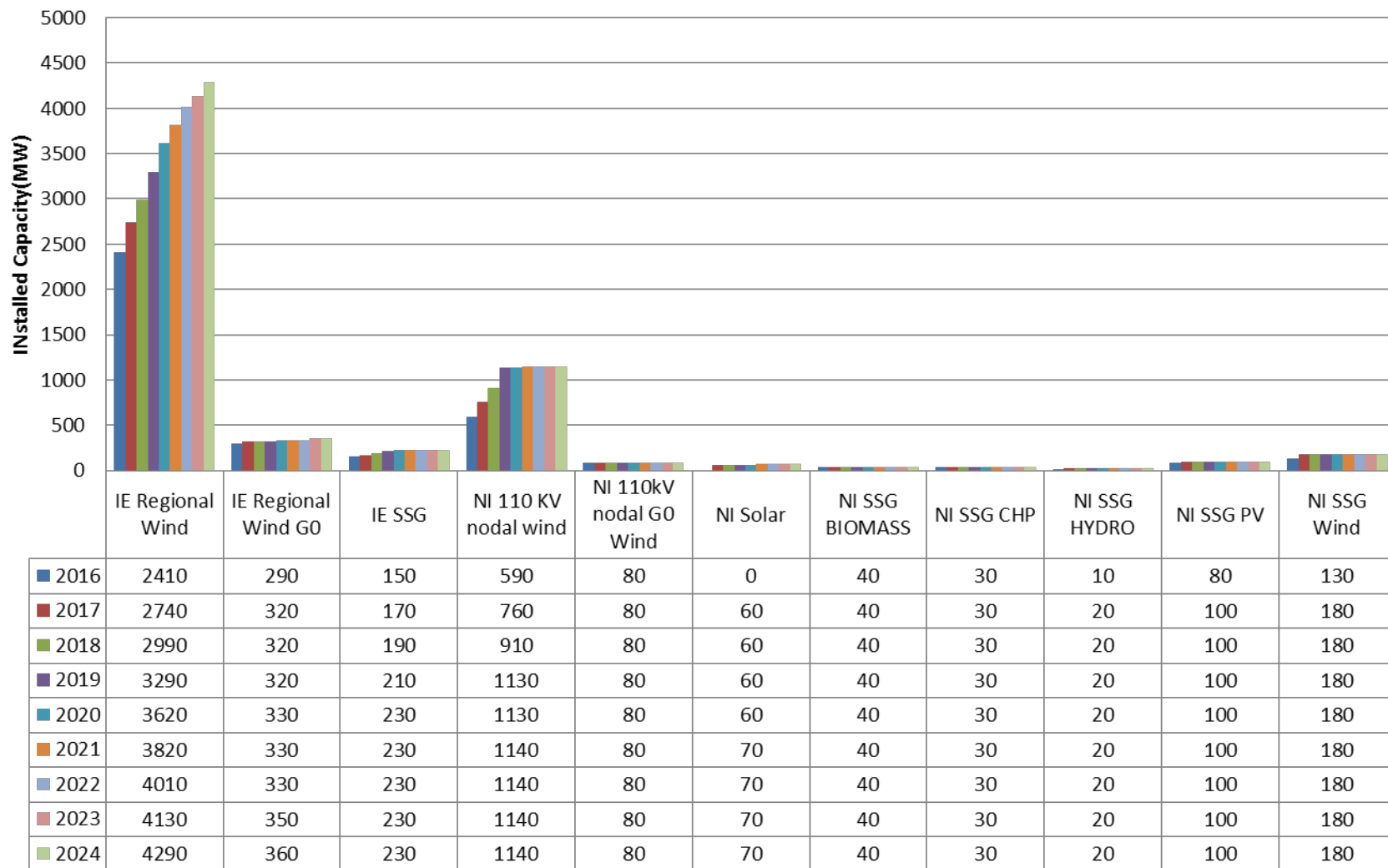
Structure of Project / Timelines



Work to Date

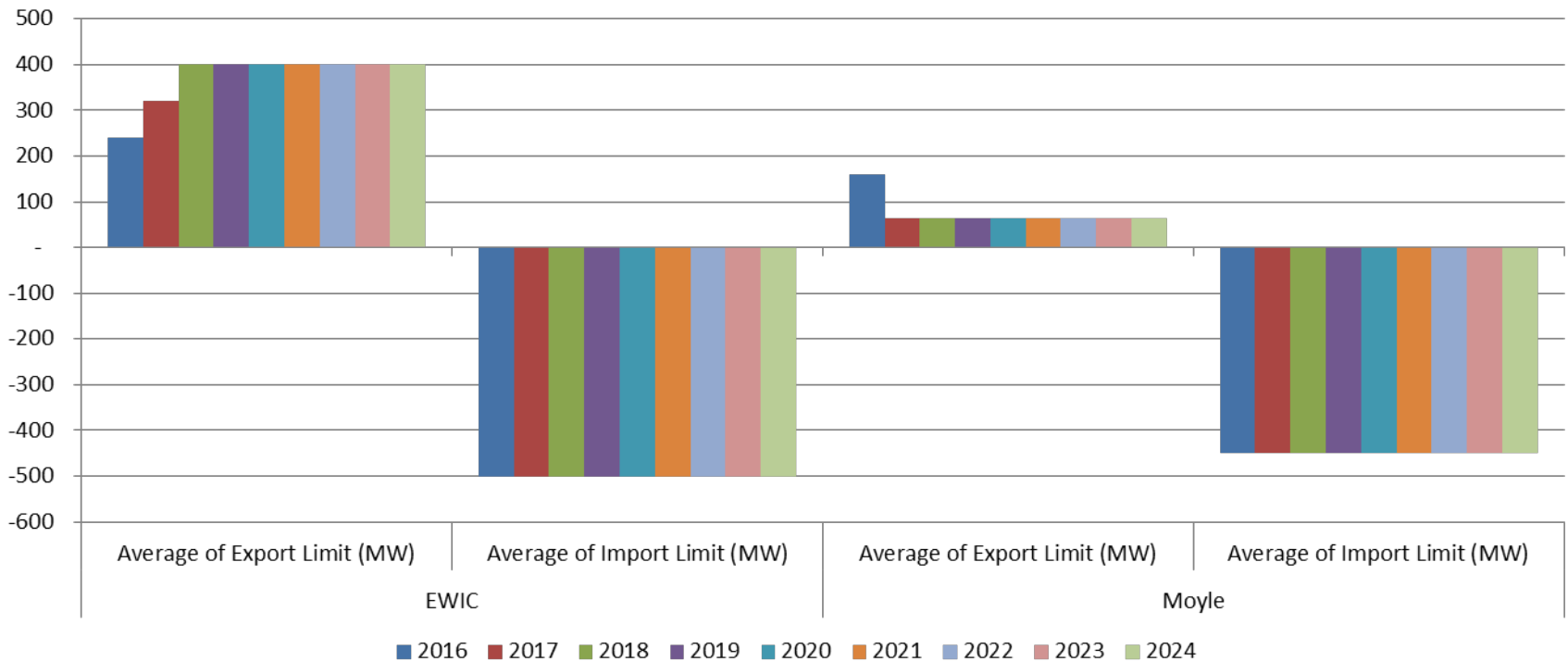
- Plexos Modelling:
 - based on contracted projects only.
 - addition of small scale generation at a nodal level.
 - system constrained model consistency checking complete
- Plexos System Constrained Model
 - Draft curtailment results available for years 2016-2024

Northern Ireland Constraints Model Installed Capacities



Interconnection Capacities

Interconnection Capacities

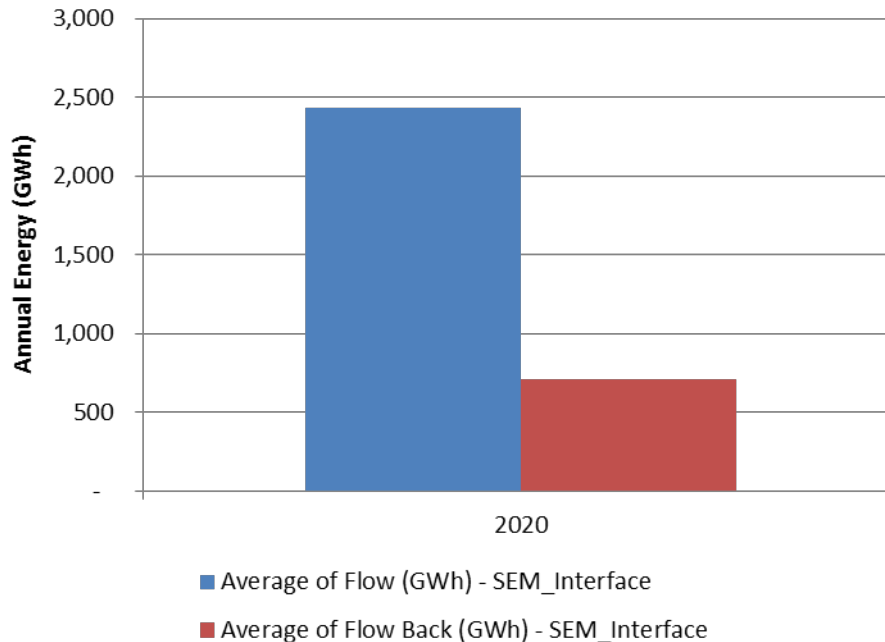


Based on agreed input assumptions with external industrial stakeholders and presented to RGLG.

SONI reserve the right to modify or update Exports de-rated by 80% to account for modelling uncertainties

Modelling SEM to GB

SEM to GB Flows (Back Flow Imports to SEM, Flow Exports to SEM)



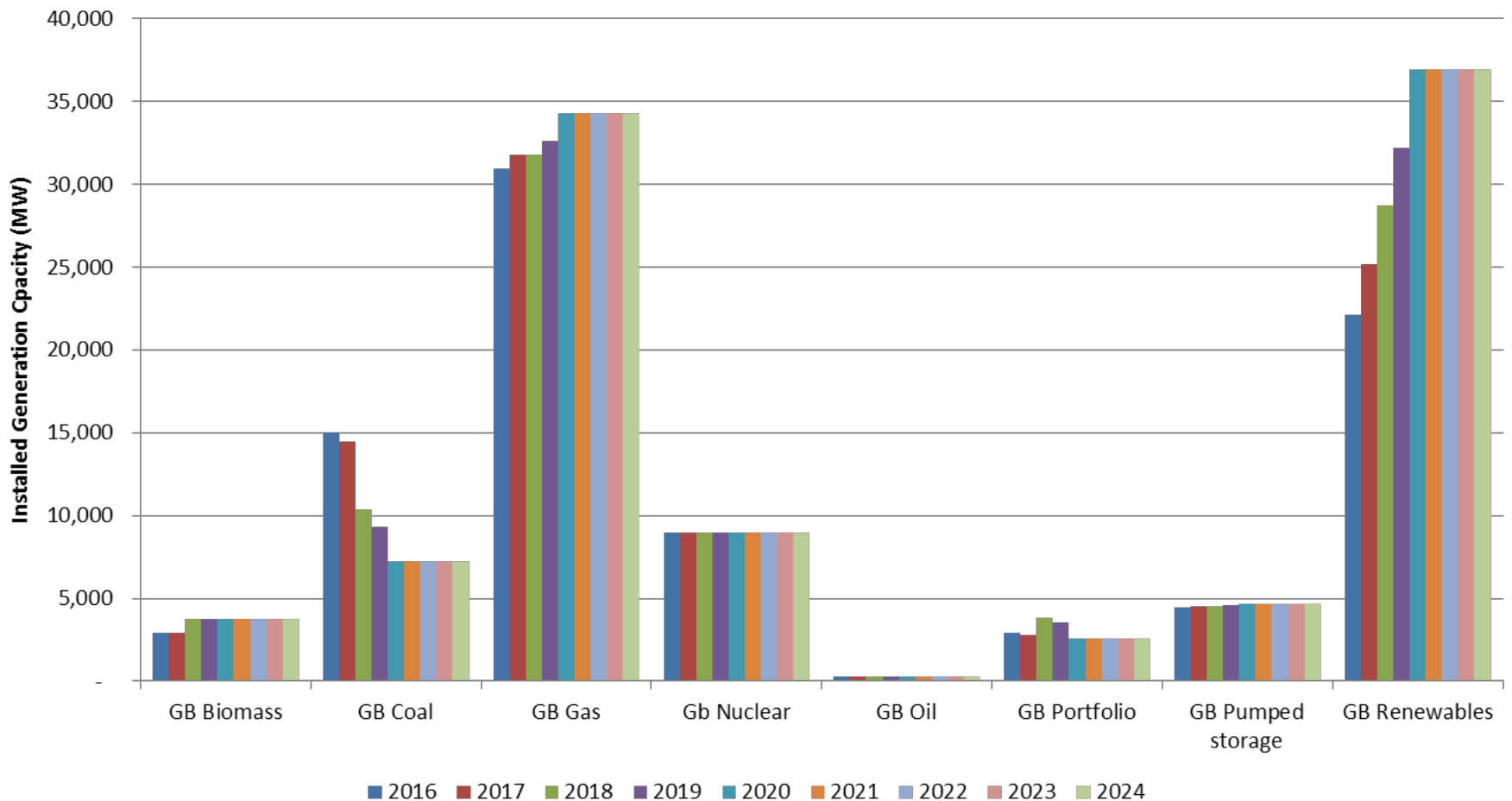
Drivers for Exports

- Agreed RES-E installed capacities for Northern Ireland
- 40% RES-E Target Ireland
- GB Market based on the National Grid FES 2014 Gone Green Scenario



FES 2014 Gone Green

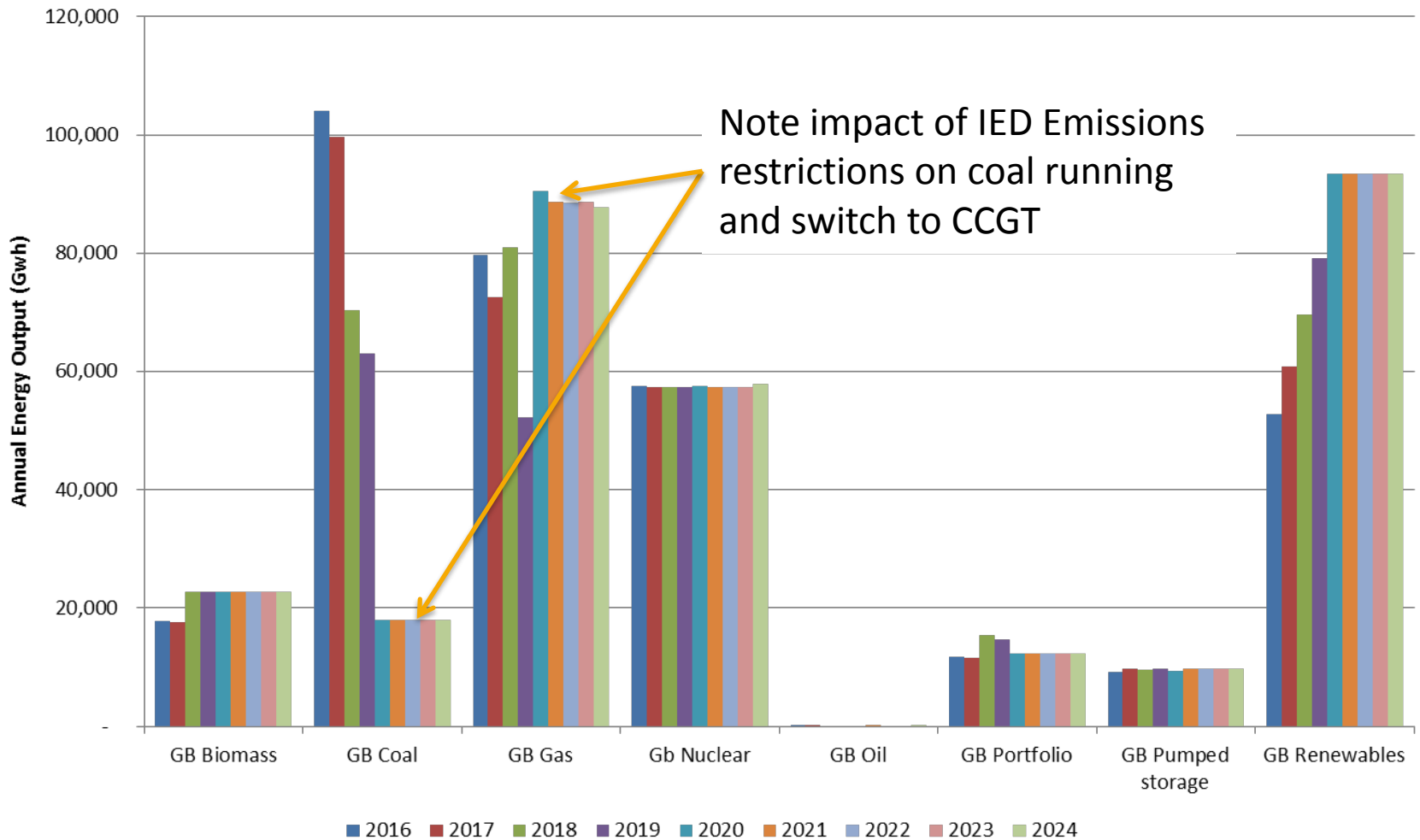
GB Installed Generation Capacities



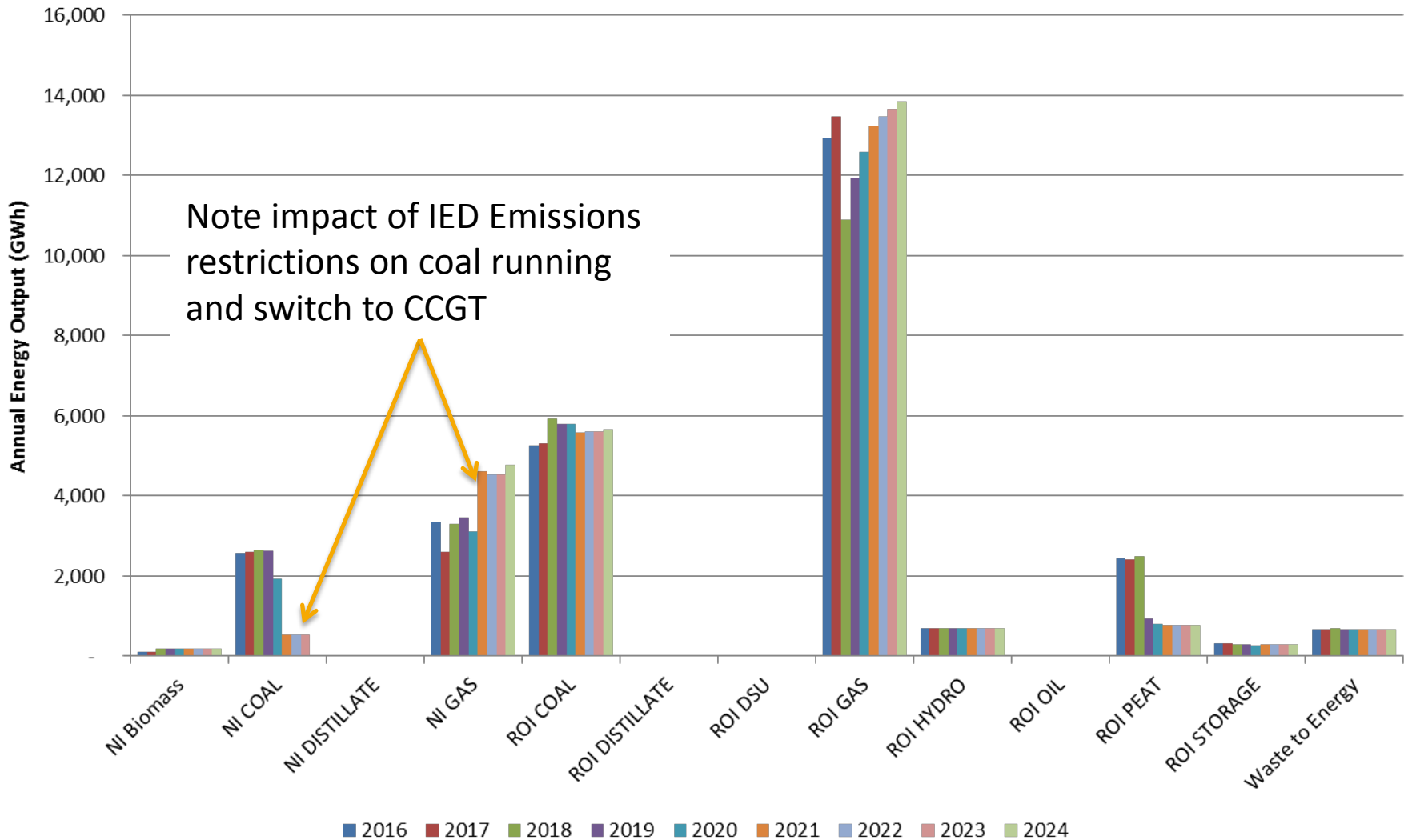
Based on agreed input assumptions with external industrial stakeholders and presented to RGLG.

SONI reserve the right to modify or update Post 2020 to be updated with FES 2014 projections

GB Generation Annual Generation Output (GWh)



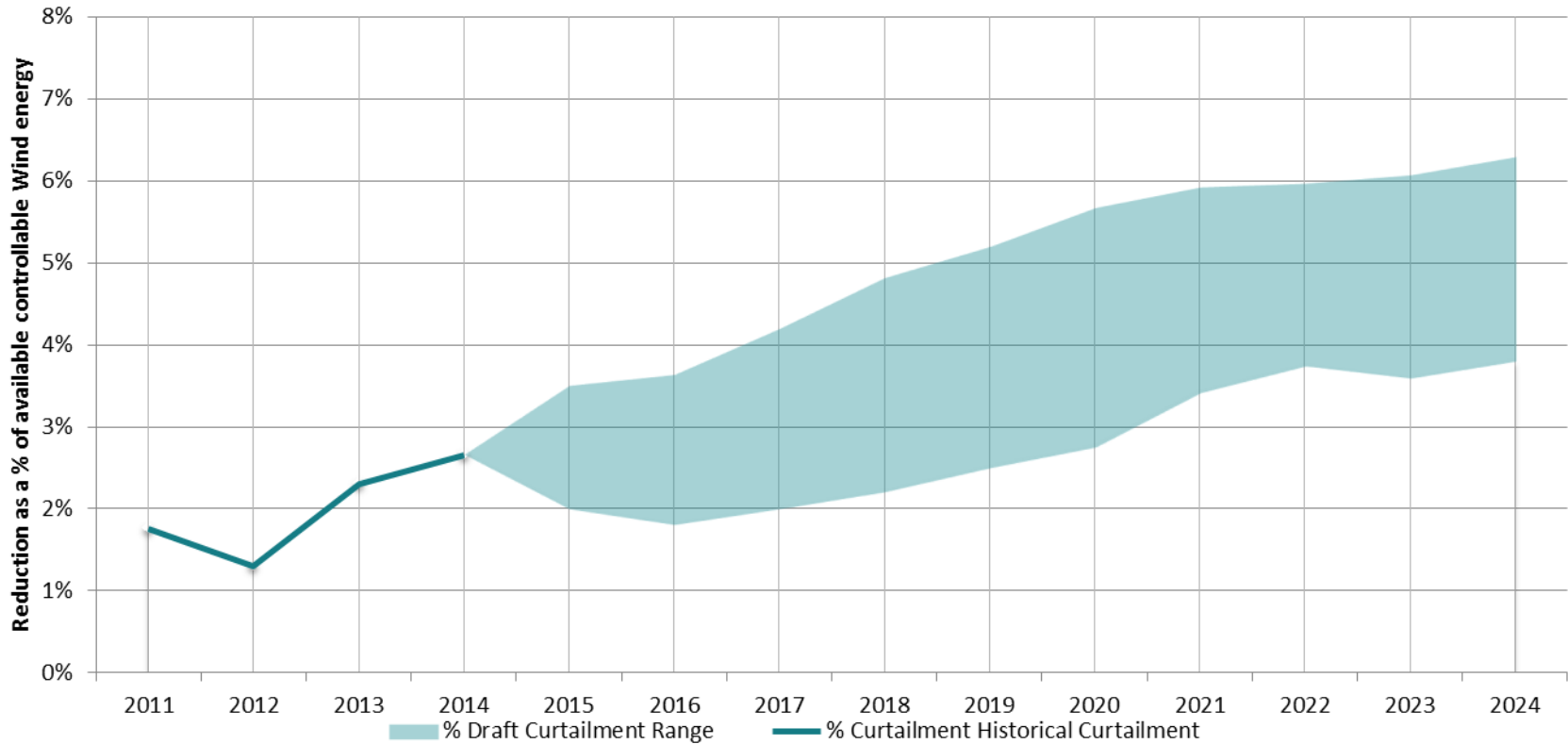
SEM Generation Output - Annual GWh



Based on agreed input assumptions with external industrial stakeholders and presented to RGLG.

SONI reserve the right to modify or update Post 2020 to be updated with FES 2014 projections

Draft Curtailment Model



Based on agreed input assumptions with external industrial stakeholders and presented to RGLG.

Draft Curtailment Results
SONI reserve the right to modify or update

Constraints

- Constraint allocation to be as per real-time re-dispatch of generation.
 - Pro-rata of Wind Farms that best alleviates the constraint.
 - Coolkeeragh Runback scheme to be accounted for.

Next Steps

- Current work running network model to determine constraint levels
- Review of preliminary results with external stakeholders when available
- Draft constraints results end Q1 2016
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