Agenda

- Introduction from Utility Regulator
- Joint Presentation from SONI & NIE Networks Part 1
  - Generation connections - progress to date
  - Change in connections environment
- Presentation from Utility Regulator
- Joint Presentation from SONI & NIE Networks Part 2
  - Existing connection offer process
  - Progress to date with influx of applications
  - How do we proceed?
  - Proposed solution
  - Timeline Matters
  - Questions to be addressed
- Closing statement from Utility Regulator & Questions

Change in Connections Environment – Part 1

Processing 890MW of applications

Industry Workshop

Joint presentation by NIE Networks and SONI

16 December 2015

Generation Connections Progress to Date

Renewables - Sub Groups

Currently achieving c23.7% vs 40% Target

Large Scale Generation

- Mainly Wind Farms
- Typical size - 5MW to 40MW
- 35 Schemes commissioned
- 659MW connected
- 0.9ROC + export energy
- Solar also emerging

Small Scale Generation

- Range of Technologies
- Wind Turbines <250kW
- Anaerobic Digesters <500kW
- c117 MW; c520 projects
- 4.0 ROC/MWh + export energy

Microgeneration

- Mainly Domestic Solar
- Micro generation – mainly Solar PV - <4kW
- Totalling some 60MW
- Now incentivised at 3ROC/MWh + export energy

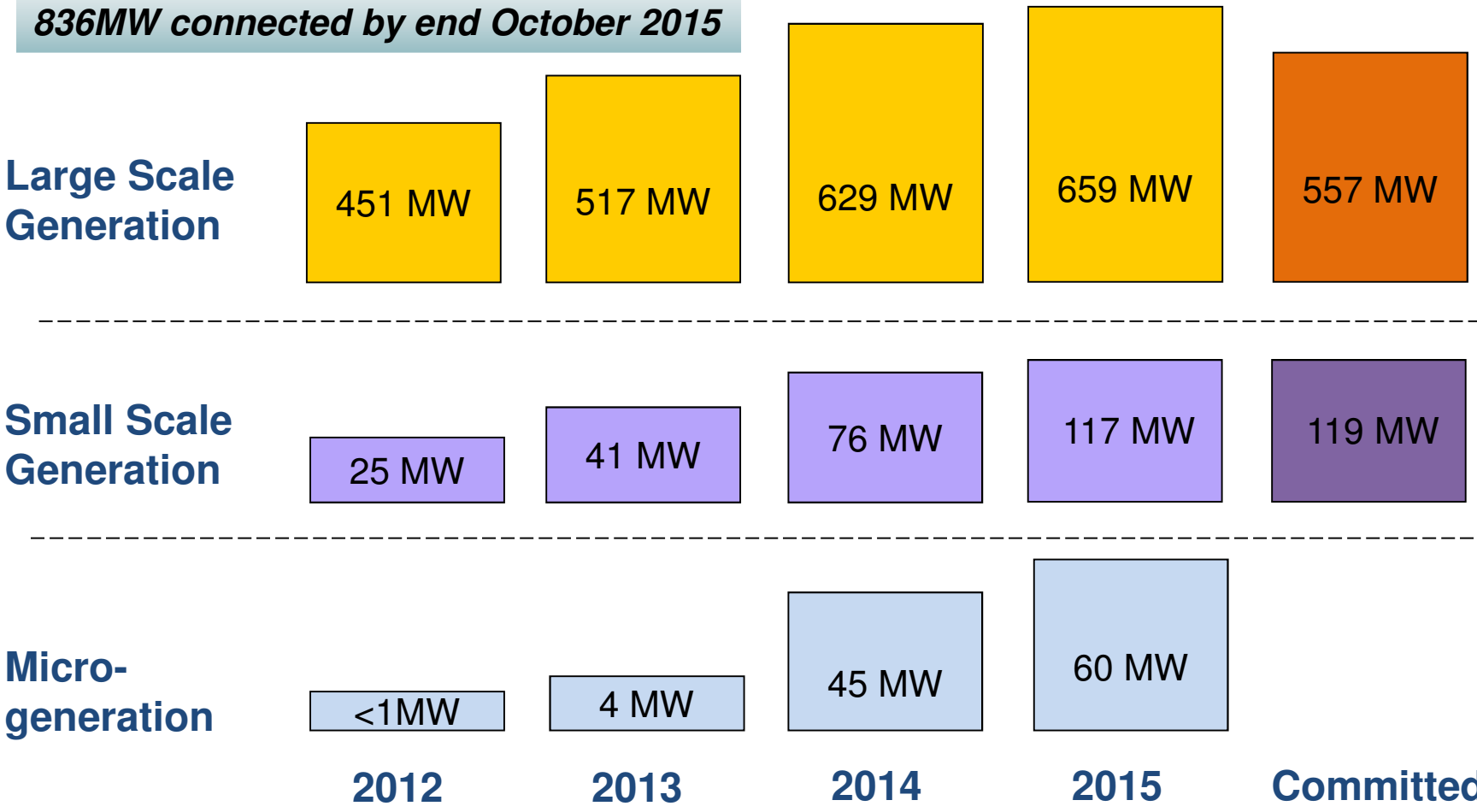
Figures to end October 2015

Northern Ireland Electricity Networks

SONI

Progress to Date

836MW connected by end October 2015



Note - above not to scale

MW Connected Comparison

- Comparison between NIE Networks and the 7 other UK DNO owners
  - NIE Networks has the highest amount of generation connected per customer to date
  - NIE Networks has the second highest amount of Renewable Generation (connected & to be connected) per customer of the 7 DNO owners

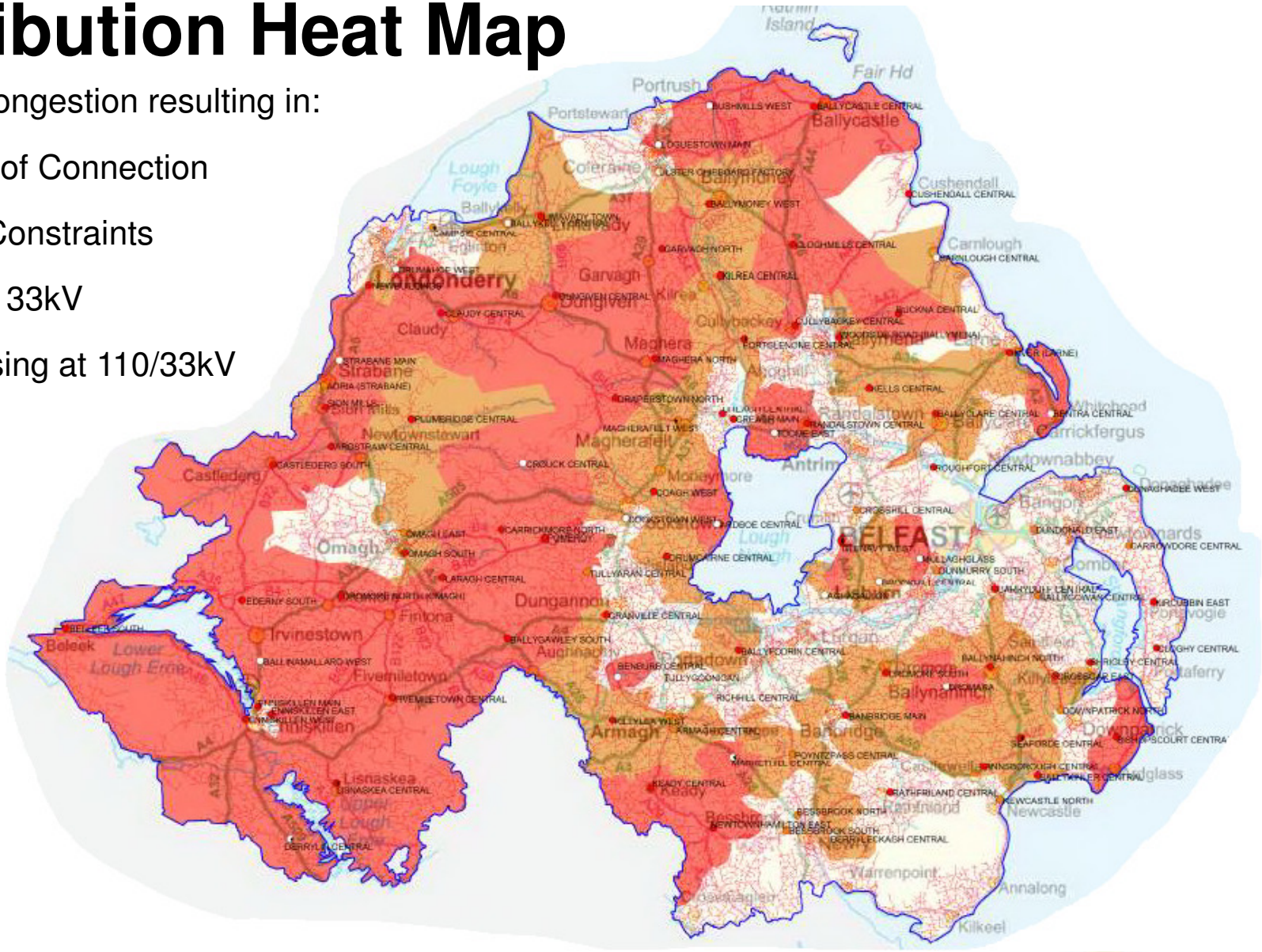
DNO	Customers (million)	Generation connected to date (kW)	Generation Connected (kW)/ Customer	RANK
NP	3.90	410,242	0.11	6
UKPN	8.10	622,000	0.08	7
ENW	2.40	1,024,000	0.43	3
SP	3.50	2,700,000	0.77	2
SSE	3.70	1,200,000	0.32	4
WPD	7.80	2,200,000	0.28	5
NIE Networks	0.84	652,000	0.78	1

Figures as of July 2014

Distribution Heat Map

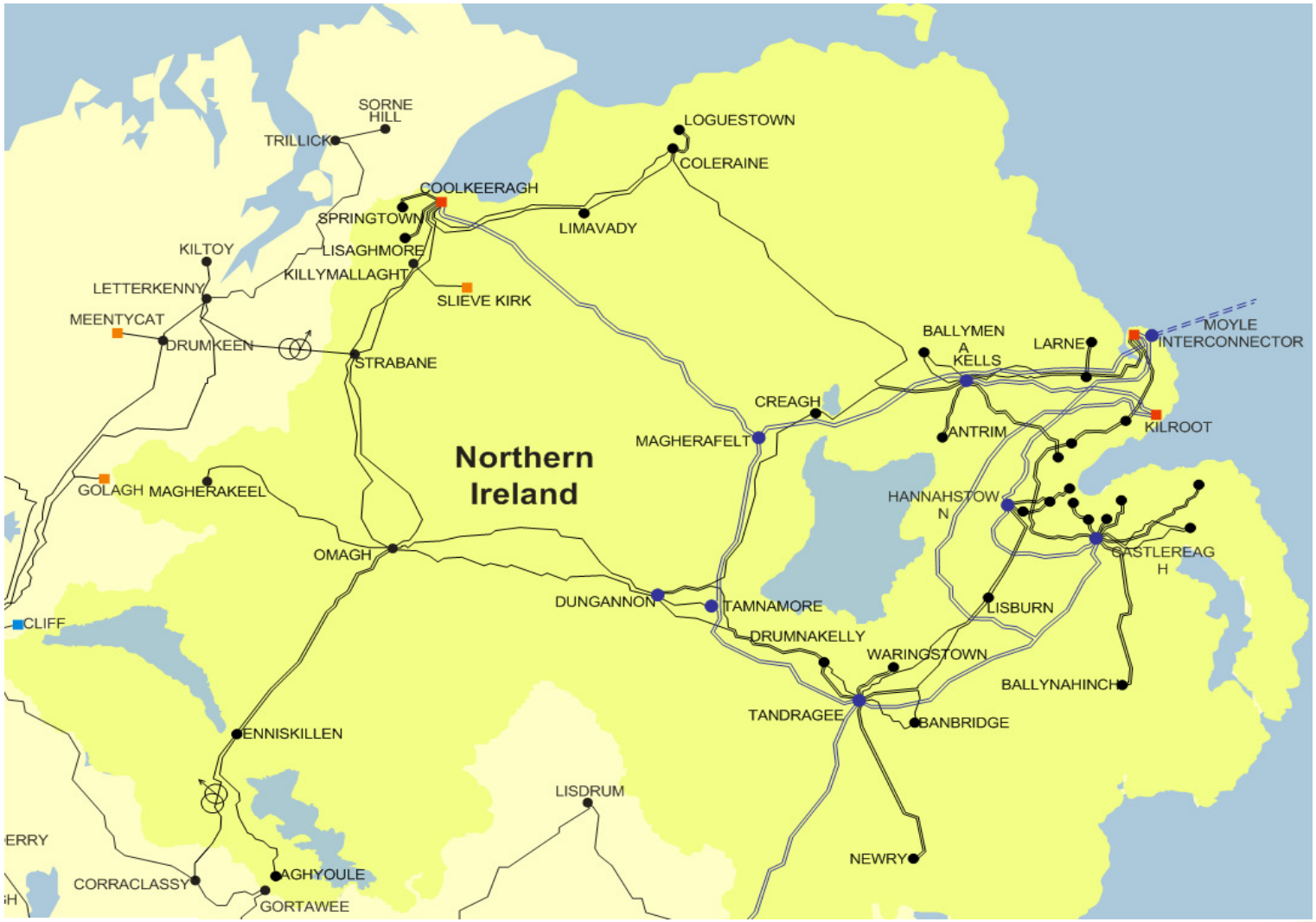
Map shows congestion resulting in:

- High Cost of Connection
- Capacity Constraints
- Only up to 33kV
- Issues arising at 110/33kV BSPs

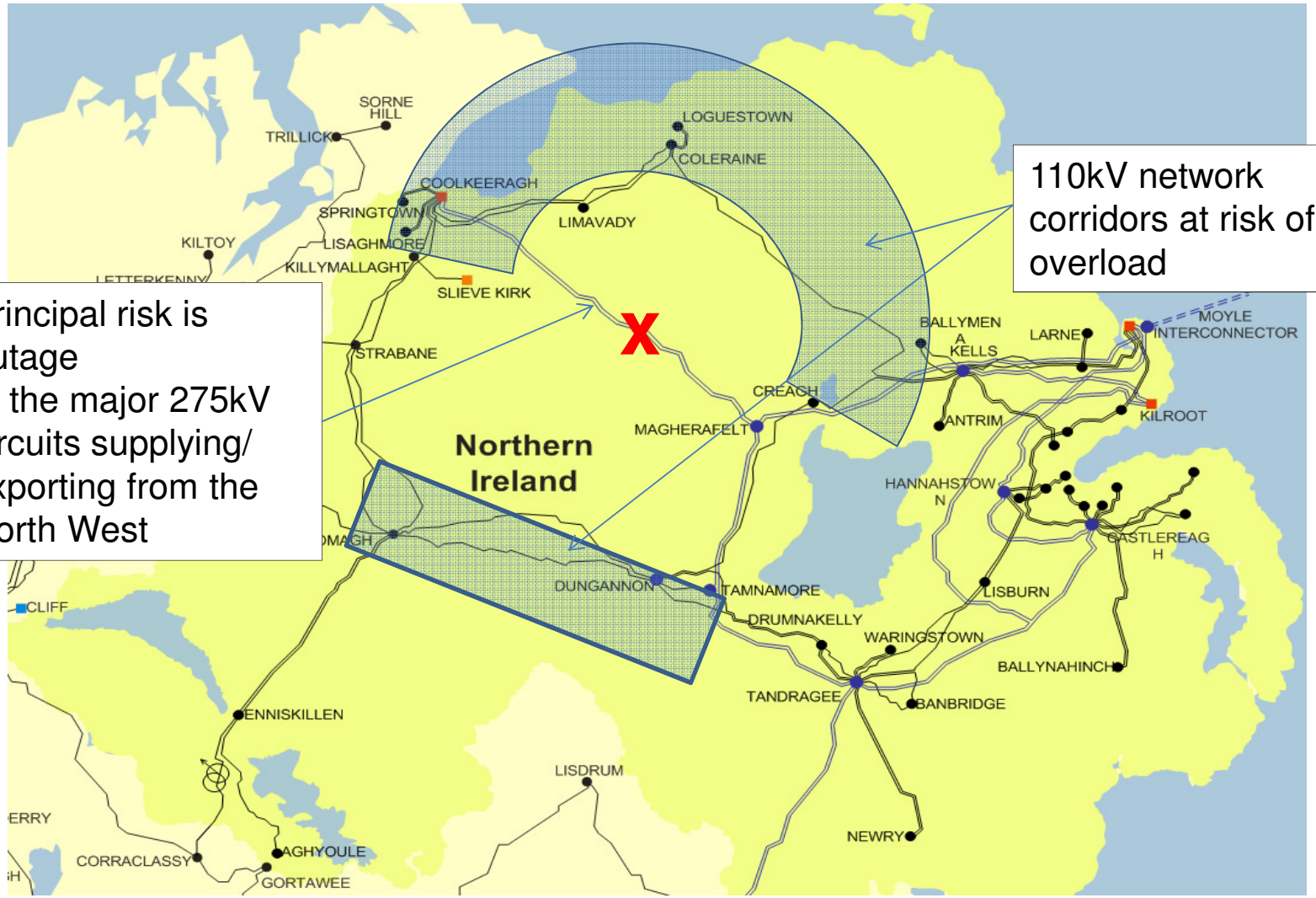


Not updated since massive influx of applications in August 15

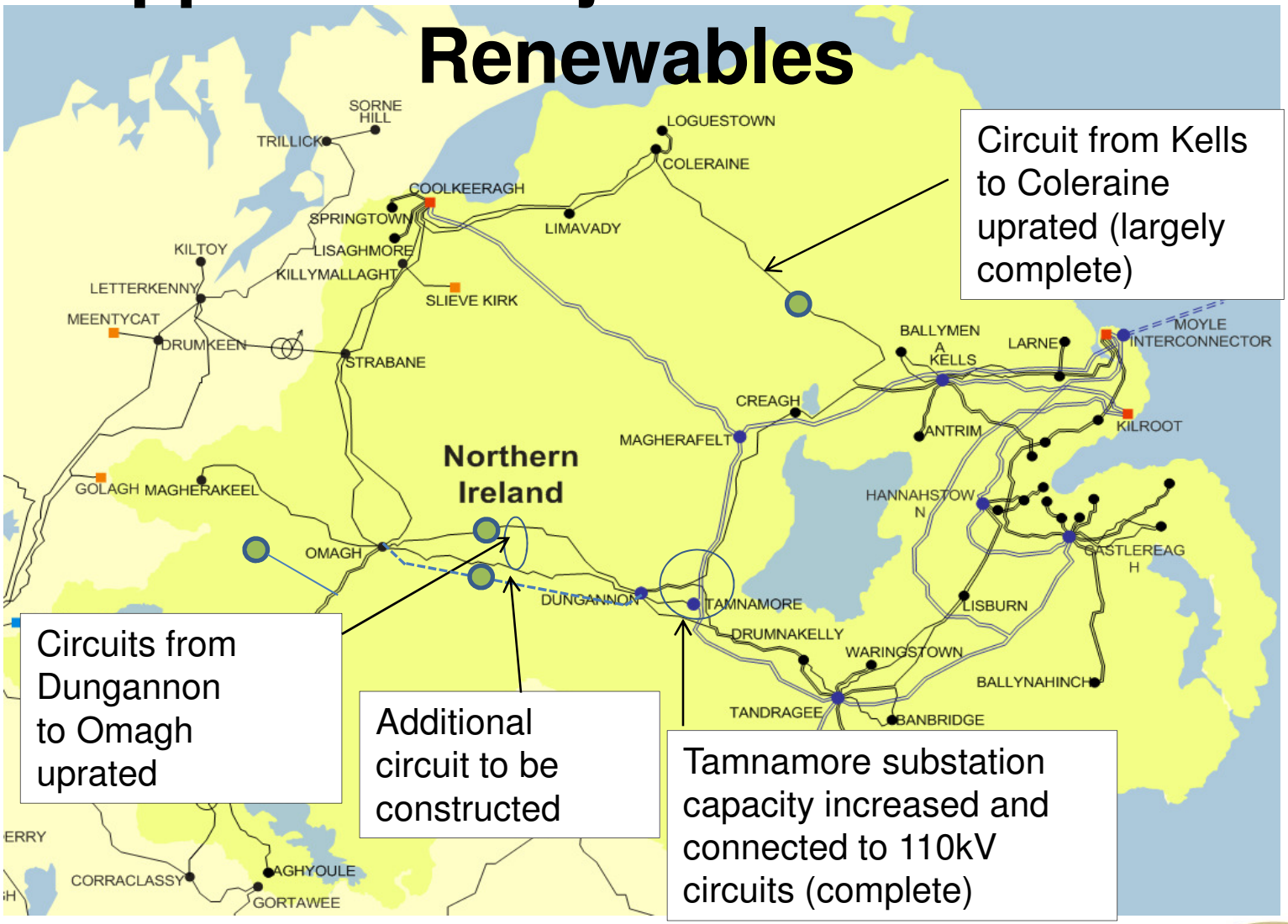
NI Transmission System



Transmission Constraint Corridors

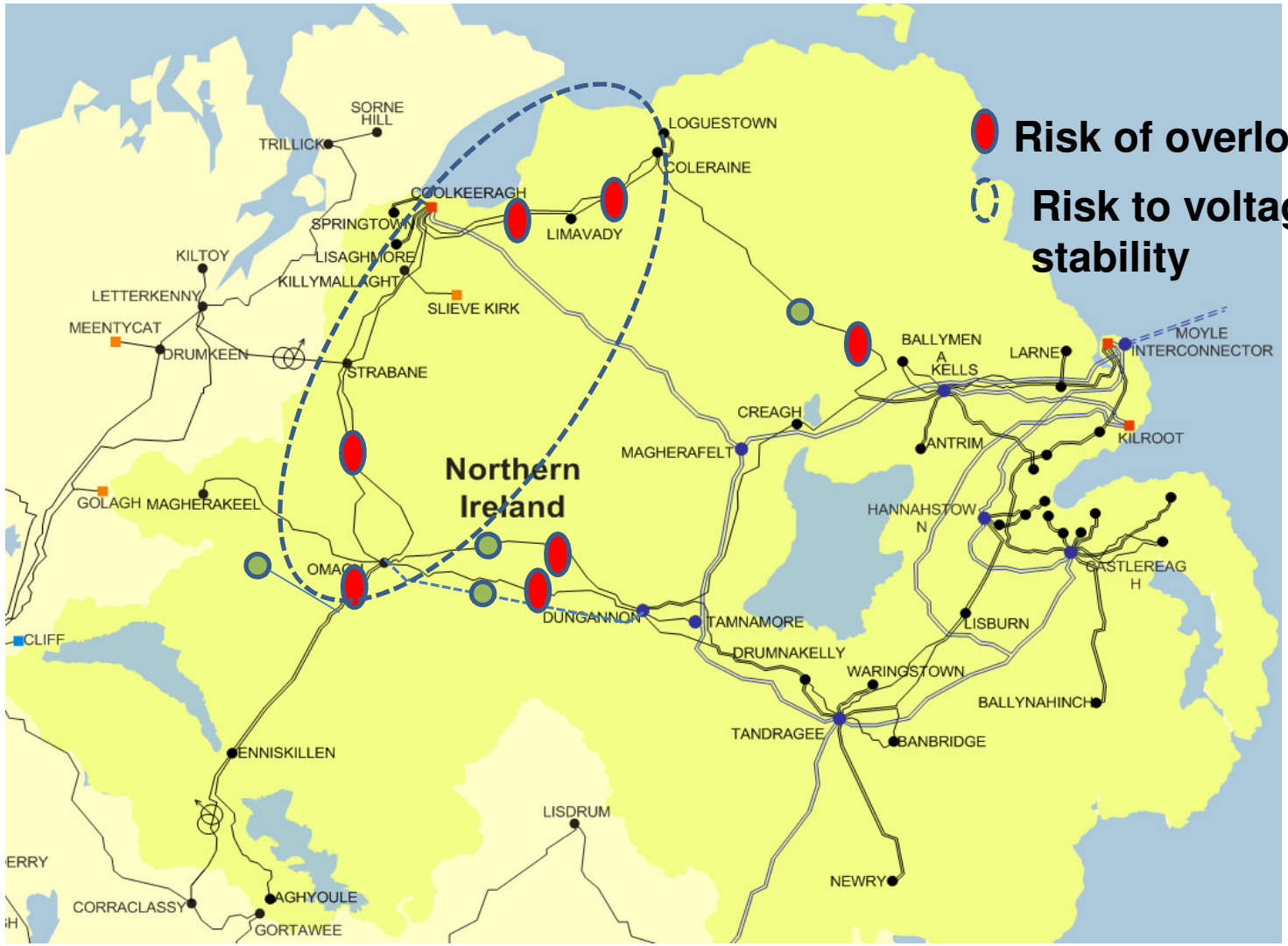


Approved Projects to Facilitate Renewables

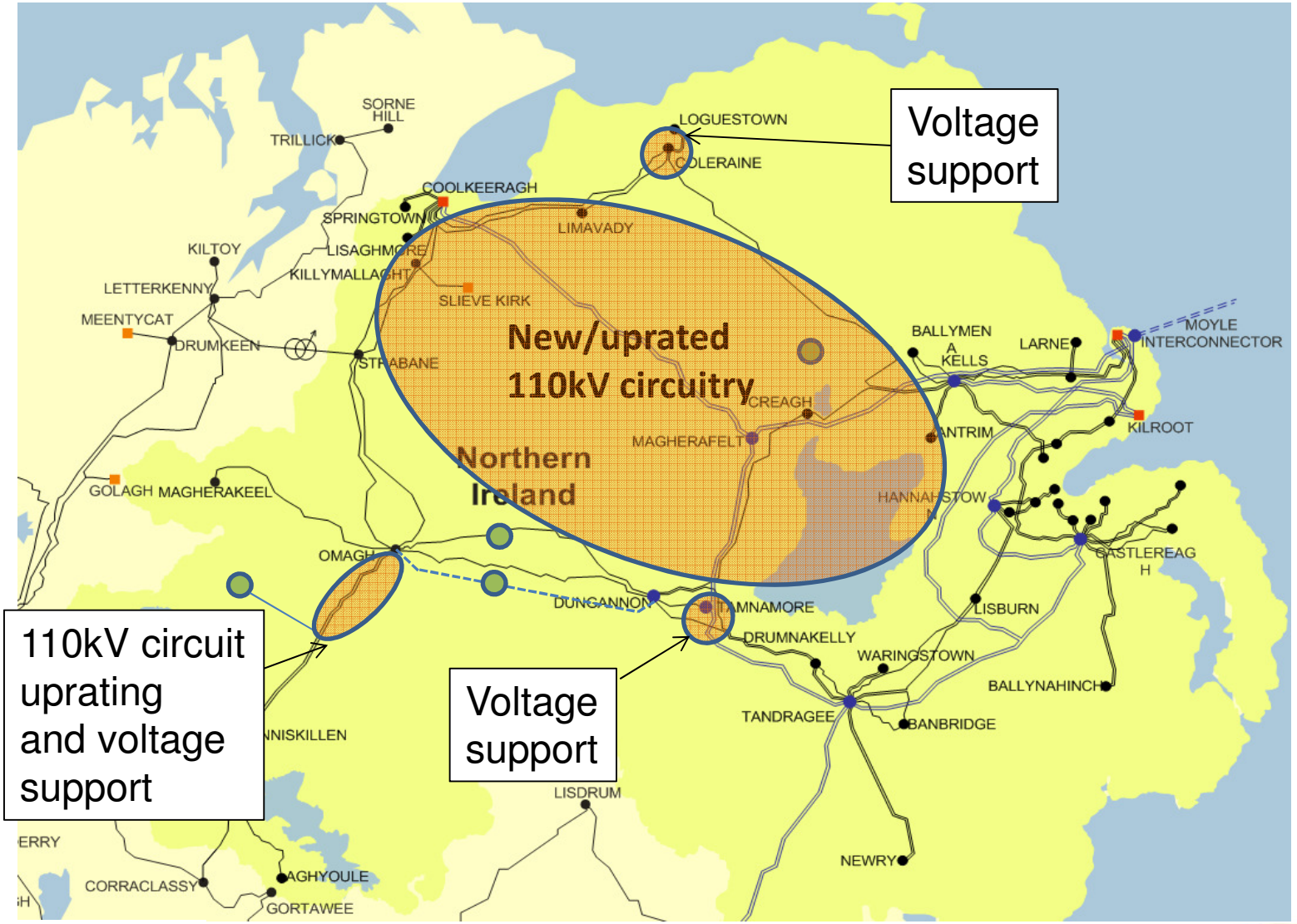


UR approved investment will facilitate c1000MW (Medium Term Plan)

Network Impacts – Committed Generation

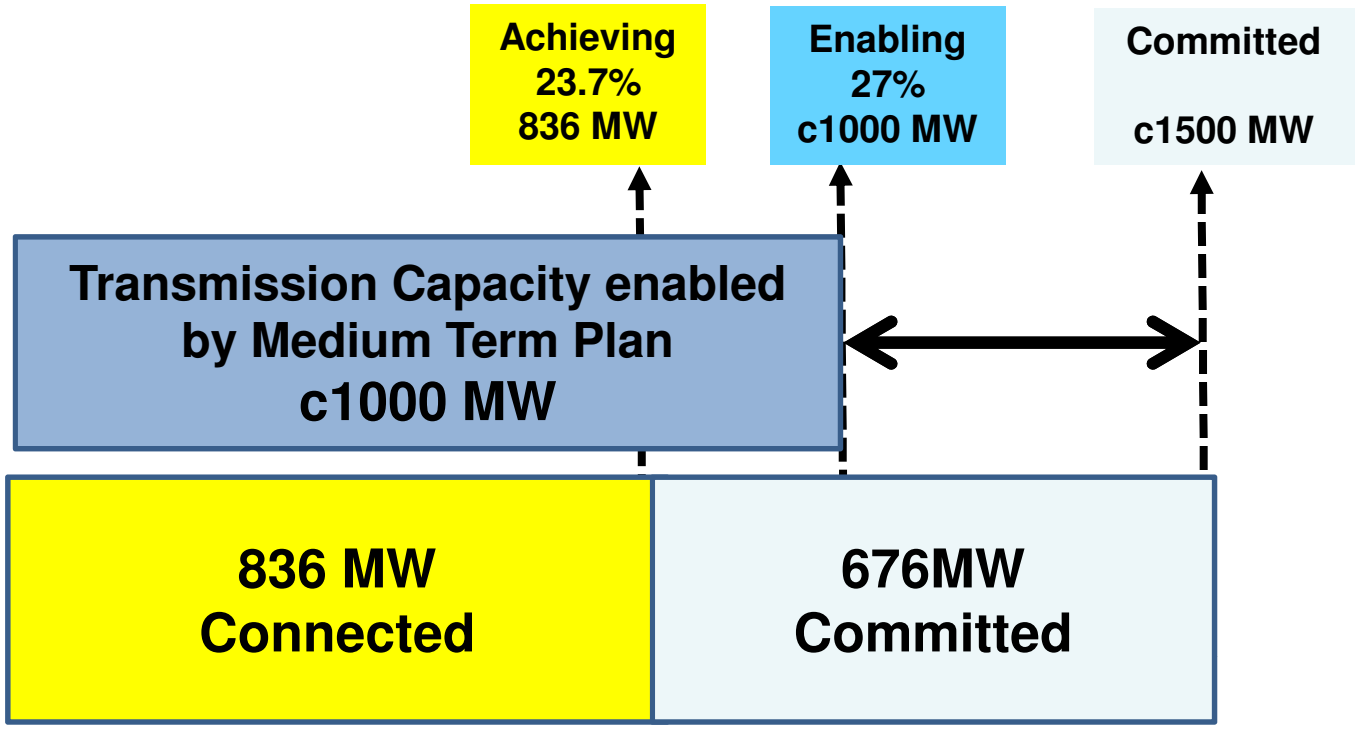


Reinforcements – Committed Generation



Any further transmission investment to be approved by Utility Regulator

To Summarise - Current Transmission Capacity Challenges



Sizeable investment required to close gap between 1000MW and 1500MW transmission capacity

Change in Connections Environment

Change to Planning Prerequisite (1)

- Planning permission was pre-requisite for application
  - Both for NIE Networks and SONI (single queue)
- Dispute was raised around the legality of this
- UR determination:
  - No legal basis for a party to have secured planning permission in advance of connection application to NIE Networks.
- NIE Networks concluded need to change for all from August 15
  - Planning permission no longer a prerequisite for distribution applications
  - Any reversal would require a change to primary legalisation and would take circa 3 years

Change to Planning Prerequisite (2)

- SONI was not party to the dispute and after publication of the determination informed UR and customers:
  - No immediate need to change policy for transmission applications
  - Open to reviewing this requirement should it become a priority
- There is now a difference in connection application process between NIE Networks and SONI
- SONI is reviewing the planning permission requirement.
- May be subject to consultation

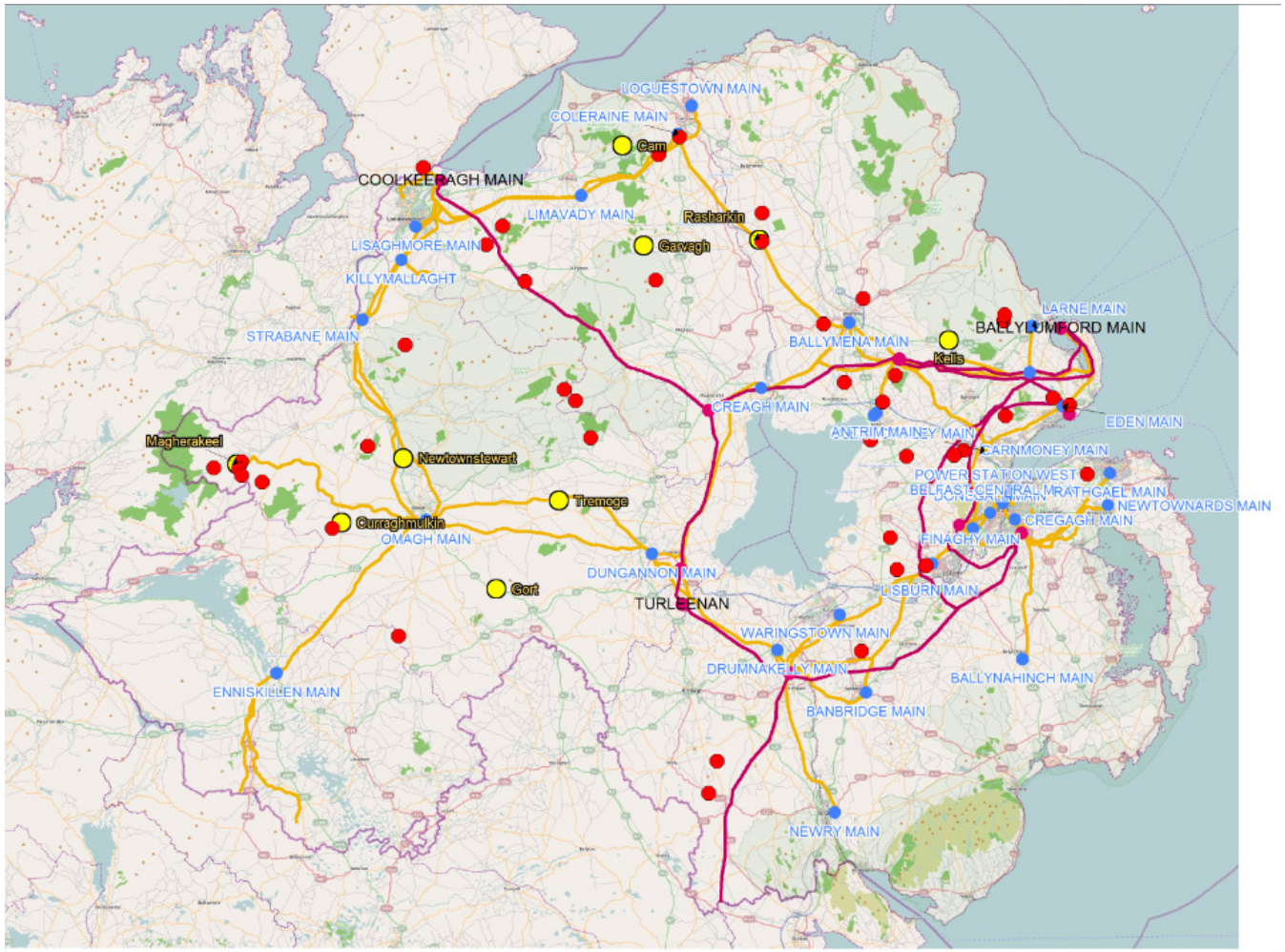
Impact of Change to Planning Prerequisite

- NIE Networks received a massive influx of distribution applications – 890MW (c320 applications)
- Large Scale Generation (LSG):
  - 50 new applications since August (~2 week period)
  - 53 applications received previous 3 years
- Small Scale Generation (SSG):
  - 270 new applications since August (~2 week period)
  - Typically 500-600 applications received per year
- LSG, SSG, transmission and distribution applications are in a single integrated generation queue.

A new connections environment was created and

it is significantly different from before

Spread of new LSG Applications



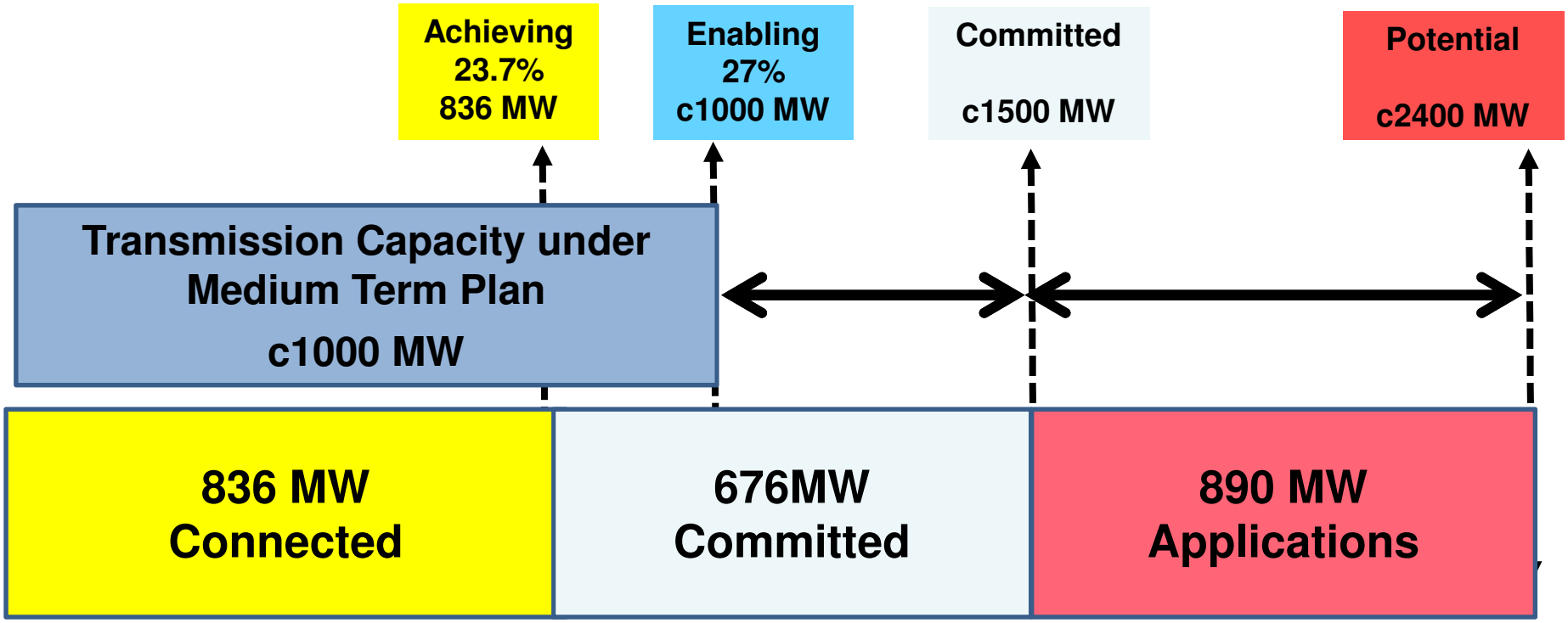
Spread of new SSG Applications

Distribution Network Development

- In RP5, NIE Networks applied for distribution network investment
- The CMA determined the investment was not in the public interest
- However some ‘low level’ investments approved.
  - £2.3M in Oct 2013 (40 primary substation ~ 120 projects released)
  - £2.1M in June 2015 (36 primary substation ~ 160 projects released)
- ‘Managed Connections’ being considered as an alternative to ‘higher order’ investments in line with the CMA decisions
- ‘Managed connection’ does not deal with transmission constraints

No mechanisms to fund higher order distribution works

To Summarise Additional Transmission Capacity Challenges



Any further transmission investment to be approved by Utility Regulator

Transmission Network Development (1)

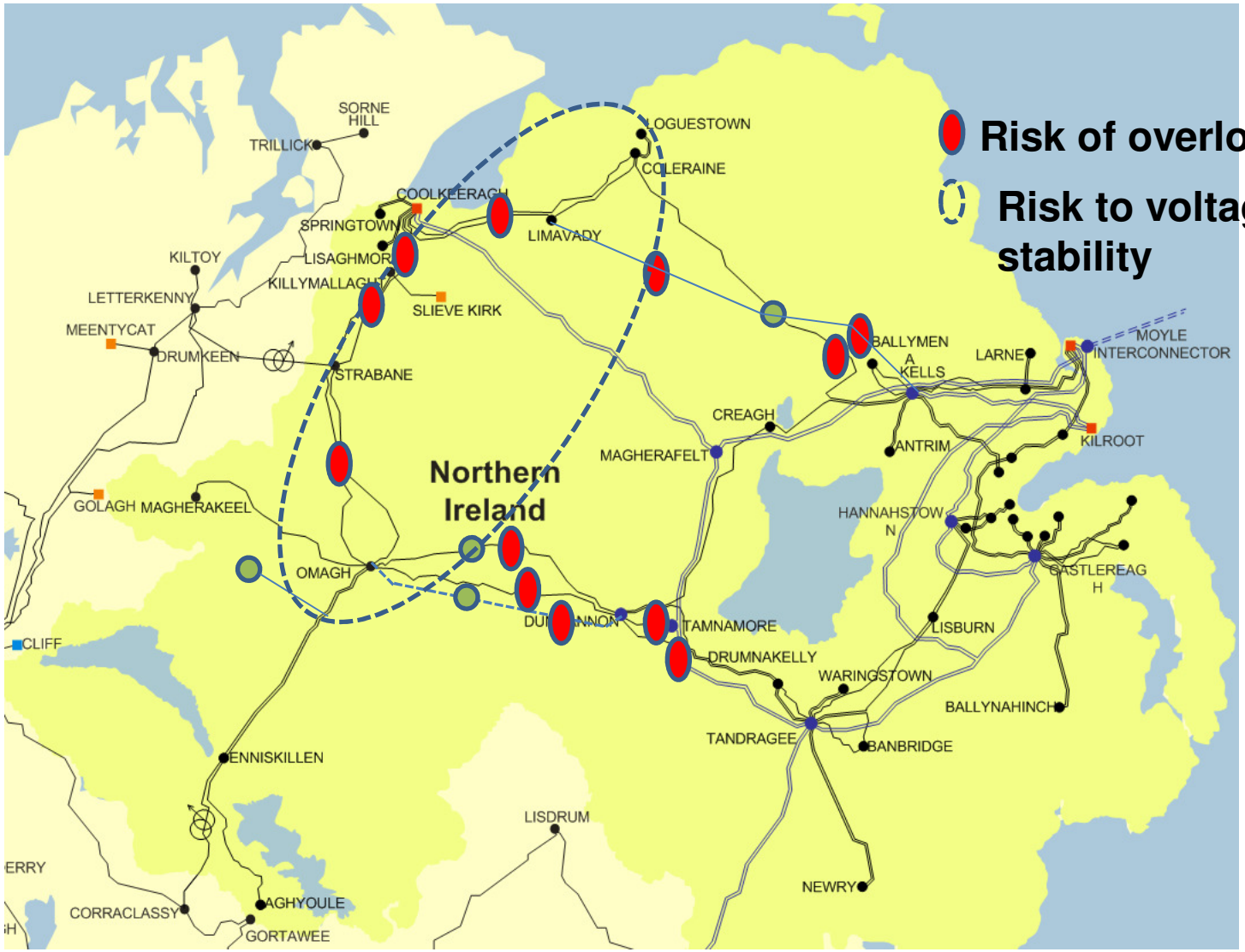
- SONI needs to consider the cumulative effect of applications on the transmission network capacity
- Until now, transmission development based on:
  - Projects with planning permission and applications/offers.
- Now, transmission development will need to account for:
  - Projects with applications/offers that have yet to secure planning permission
- More uncertainty over investments required
- Additional c890MW will require significant transmission investment
- Investment requires UR review and approval

Connection export capability may be limited until transmission works are complete.

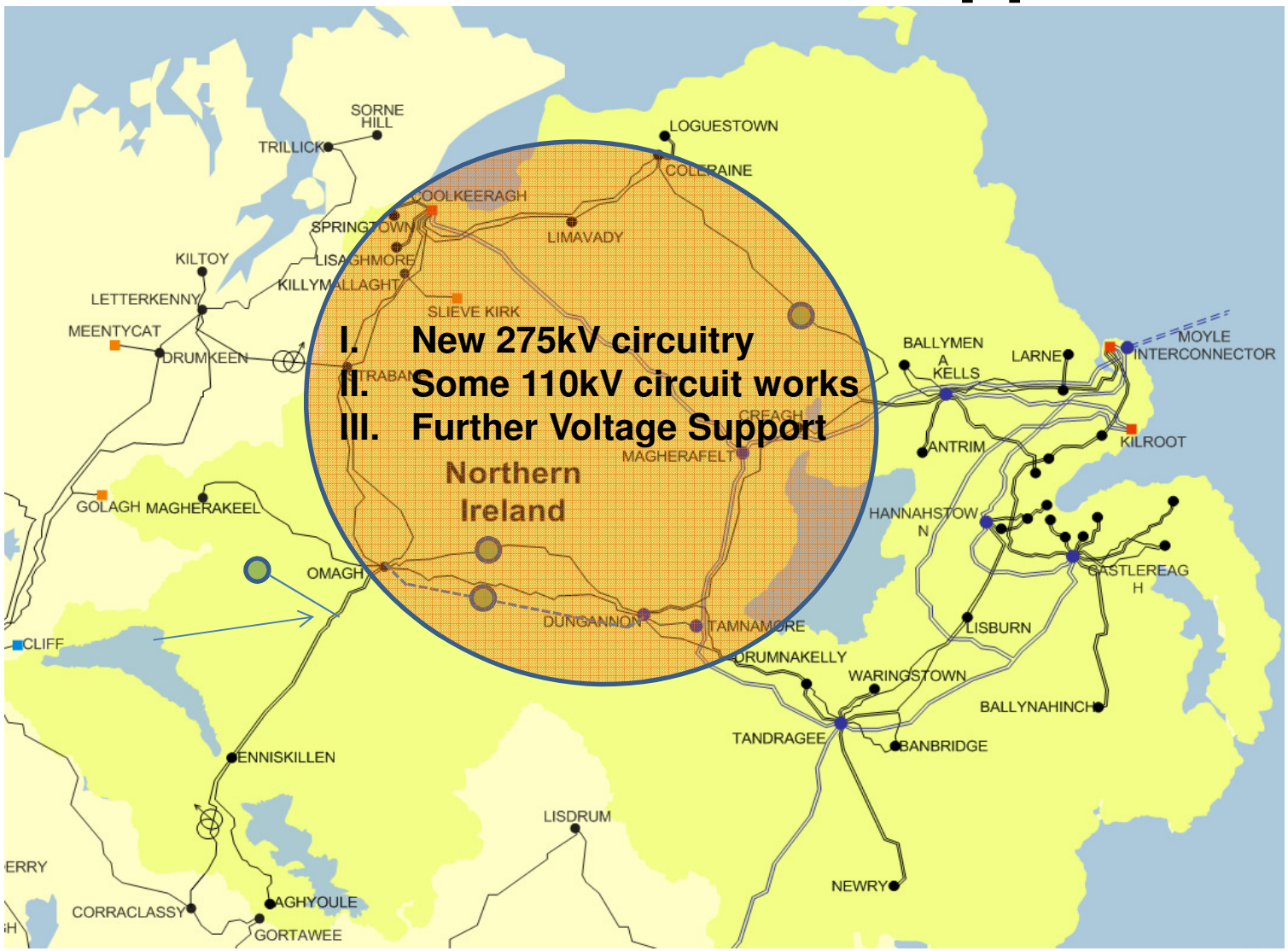
Transmission Network Development (2)

- SONI has started to look at the likely transmission developments required to accommodate different levels of generation
- Main focus is on what is required for the committed generation (includes 676MW committed)
- Looking ahead at different generation scenarios, taking account of the influx of applications (includes 890MW influx)
- Ensure that that the solution for the committed generation is a sensible building block for further transmission developments

Network Impacts – Influx of Applications



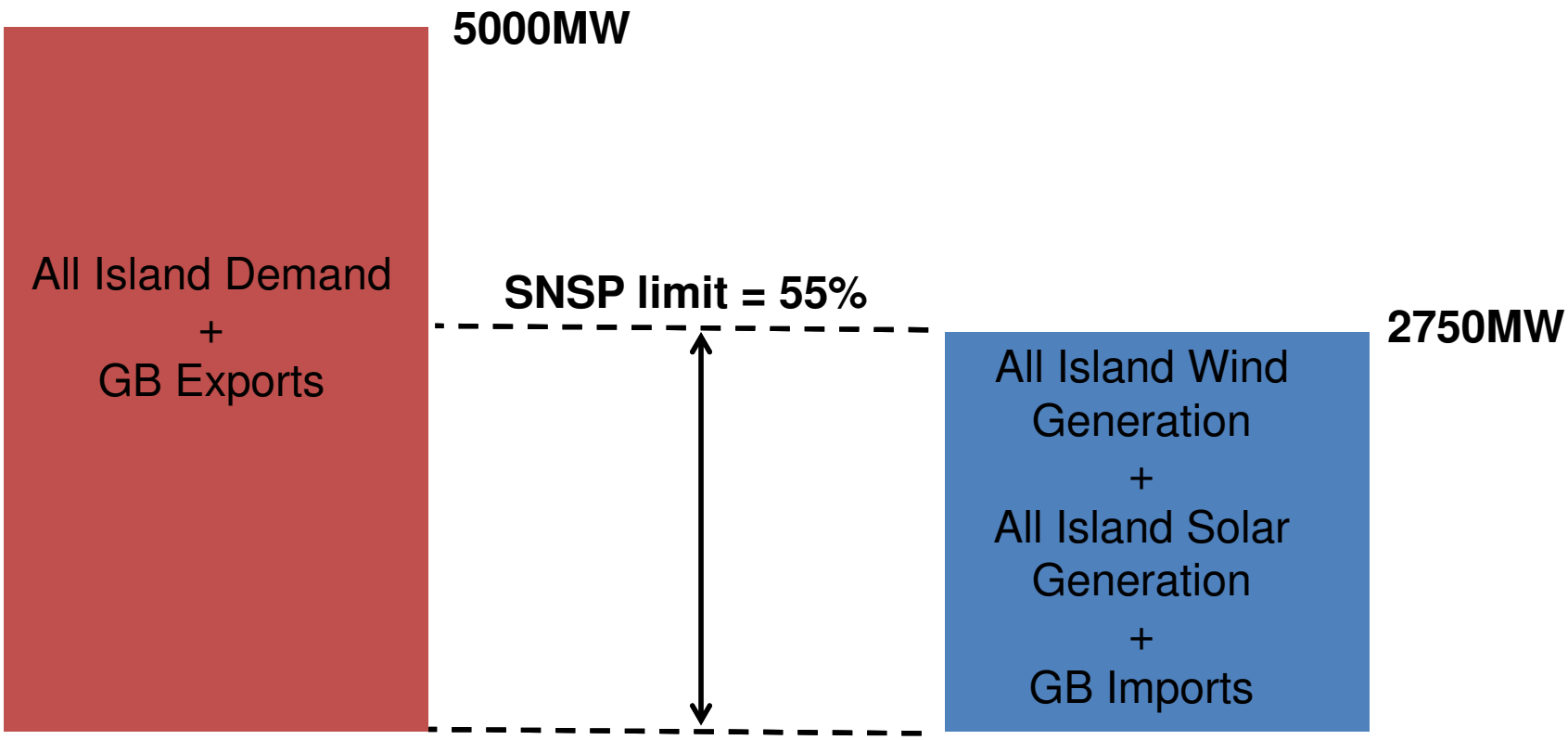
Reinforcements – Influx of Applications



Operational Limits

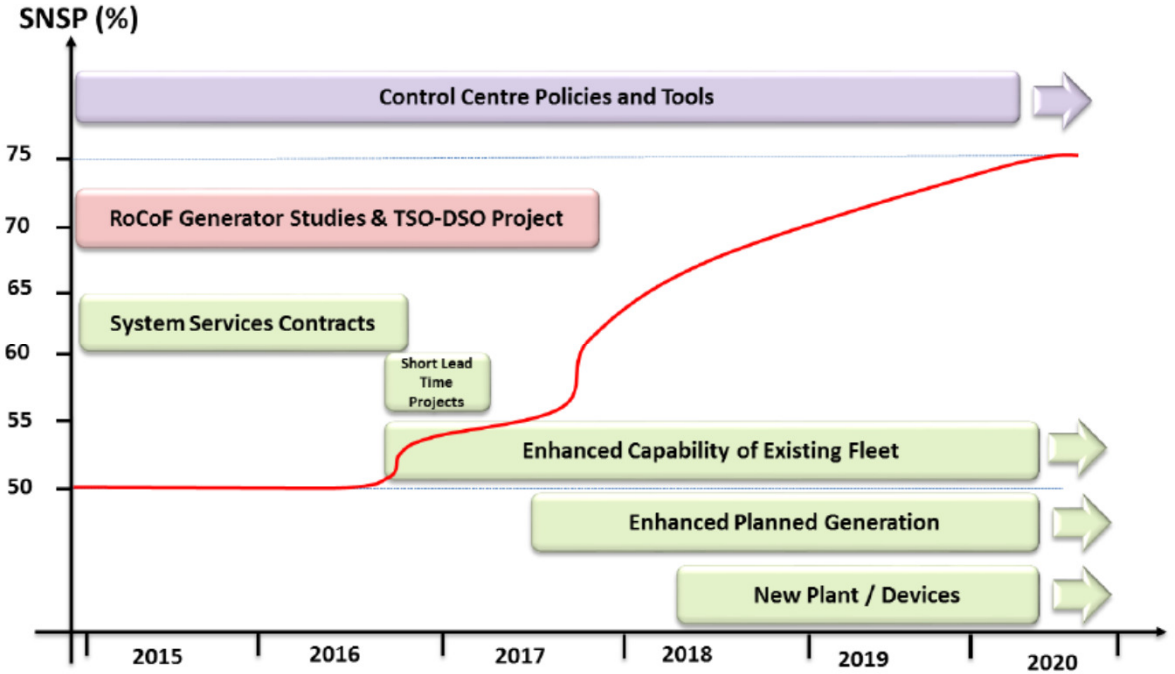
- SONI also needs to consider the cumulative effect of applications on system operation
- Generation is managed to balance supply and demand
- We have an SNSP limit to manage – **S**ystem **N**on-**S**ynchronous **P**enetration
- There is a limit to the amount of non-synchronous generation on the system at any one time
- Non-synchronous generation includes wind and solar generation as well as imports from GB (Moyle and EWIC)
- Currently the SNSP limit is 55% on a trial basis
- 55% of demand can be met by wind, solar and exports
- If 55% SNSP does not increase, it will mean increased curtailment as renewable generation levels increase

SNSP Limit


5000MW
All Island Demand
+
GB Exports
SNSP limit = 55%
2750MW
All Island Wind Generation
+
All Island Solar Generation
+
GB Imports

SNSP Limit (2)

- Work is ongoing to increase SNSP to 75% by 2020+ as part of the DS3 programme
- This work is being carried out on an all-island basis between SONI, NIE Networks, EirGrid and ESB
- Small scale uncontrollable generation being looked at in this context



Utility Regulator
ELECTRICITY GAS WATER

What does the Utility Regulator do?



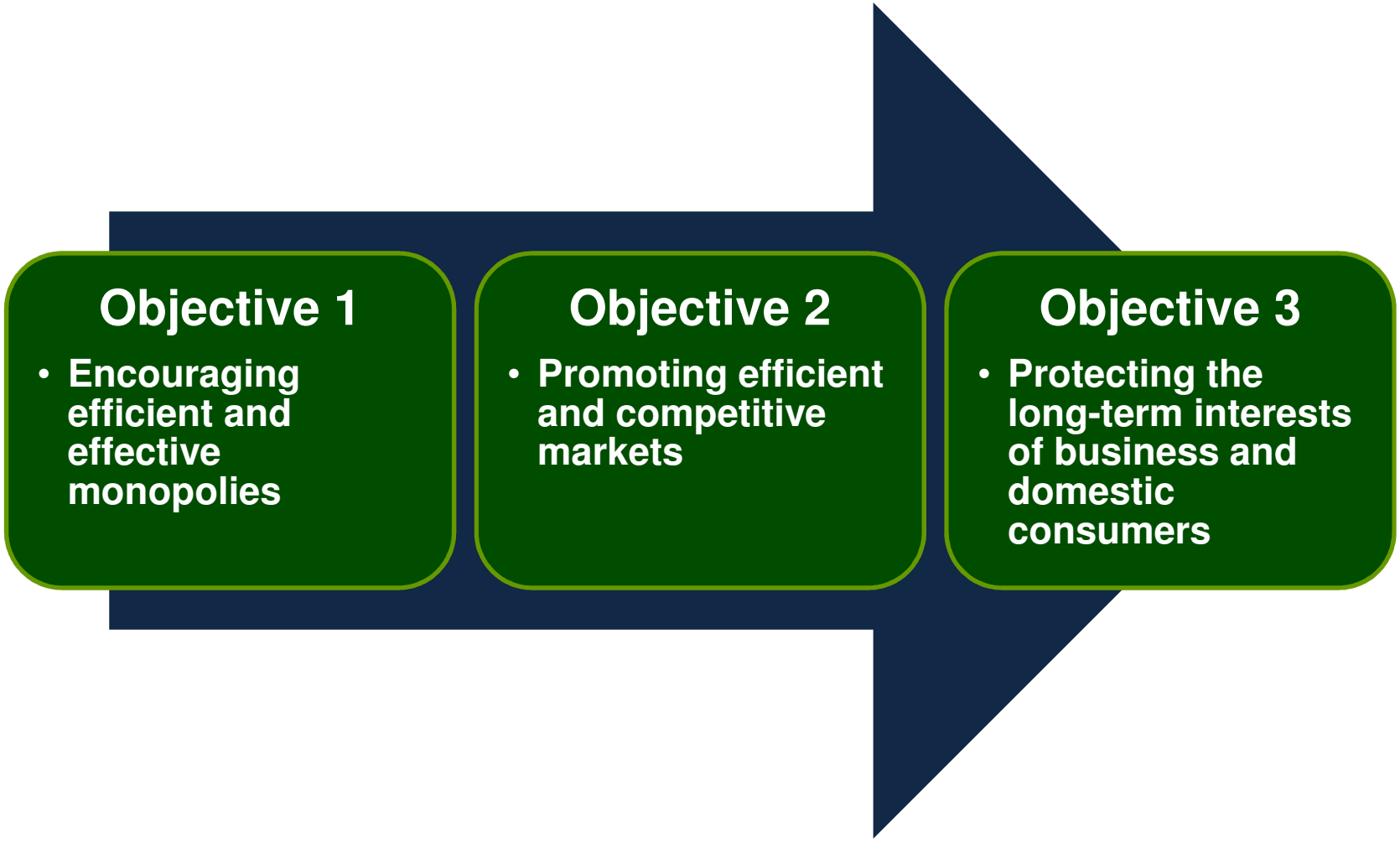
Our roles and responsibilities

Utility Regulator
ELECTRICITY GAS WATER

Issuing monitoring and enforcing licences	Setting standards of service	Keeping bills as low as possible
Promoting choice	Ensuring investment and innovation	Ruling on complaints and appeals

Getting the balance right

Our Corporate Strategy 2015-2019



Network Investment

- UR's statutory duties include consumer protection
- DSO and TSO determine the requirement and need for economic investment within the system
- UR approve efficient investment where necessary for consumers
- Future network investment will impact consumers bills
- Fuel poverty remains an issue with NI consumers

Connections Legislation

- The System Operators have to operate within their Licences, their Statement of Charges, the Codes (eg the distribution code) and the relevant legalisation.

- NIE Networks can refuse to connect under the Electricity (Northern Ireland) Order 1992
- Article 21 - Exceptions from duty to connect

- Electricity (*Connection* Charges) *Regulations* (*Northern Ireland*) 1992 - Rebates

- Electricity At Work Regulations (Northern Ireland) 1991 Provision 5 - ***Strength and capability of electrical equipment***
- *5. No electrical equipment shall be put into use where its strength and capability may be exceeded in such a way as may give rise to danger.*

- To proceed without NIE Networks' consent would be against Regulation 26 of the Electricity Safety, Quality and Continuity Regulations (ESQCR). 2012. - ***Connections to installations or to other networks***
- *26.—(1) A person shall not make or alter a connection from a distributor's network to a consumer's installation, a street electrical fixture or to another distributor's network without that distributor's consent, unless such consent has been unreasonably withheld.*

COMPLAINTS AND DISPUTES

- UR is the Dispute Resolution Body – must operate within dispute process.
- All complaints and disputes are dealt with in accordance with the UR's *'Policy on the Resolution of Complaints, Disputes and Appeals and Guide for Applicants'* dated June 2013
- This Policy outlines the procedures which the Utility Regulator will generally follow when dealing with a complaint or dispute which it has been requested to determine.

Our role

- Protect consumers long term interests
- Price Control and investment
  - Determining the revenue allowed for network investment.
- Licence compliance
  - Ensuring NIE/SONI meets their criteria in its licence directly related to grid connections
- Appeals, complaints and disputes
  - Acting as dispute resolution authority in relation to connection issues

Change in Connections Environment – Part 2

Processing 890MW of applications

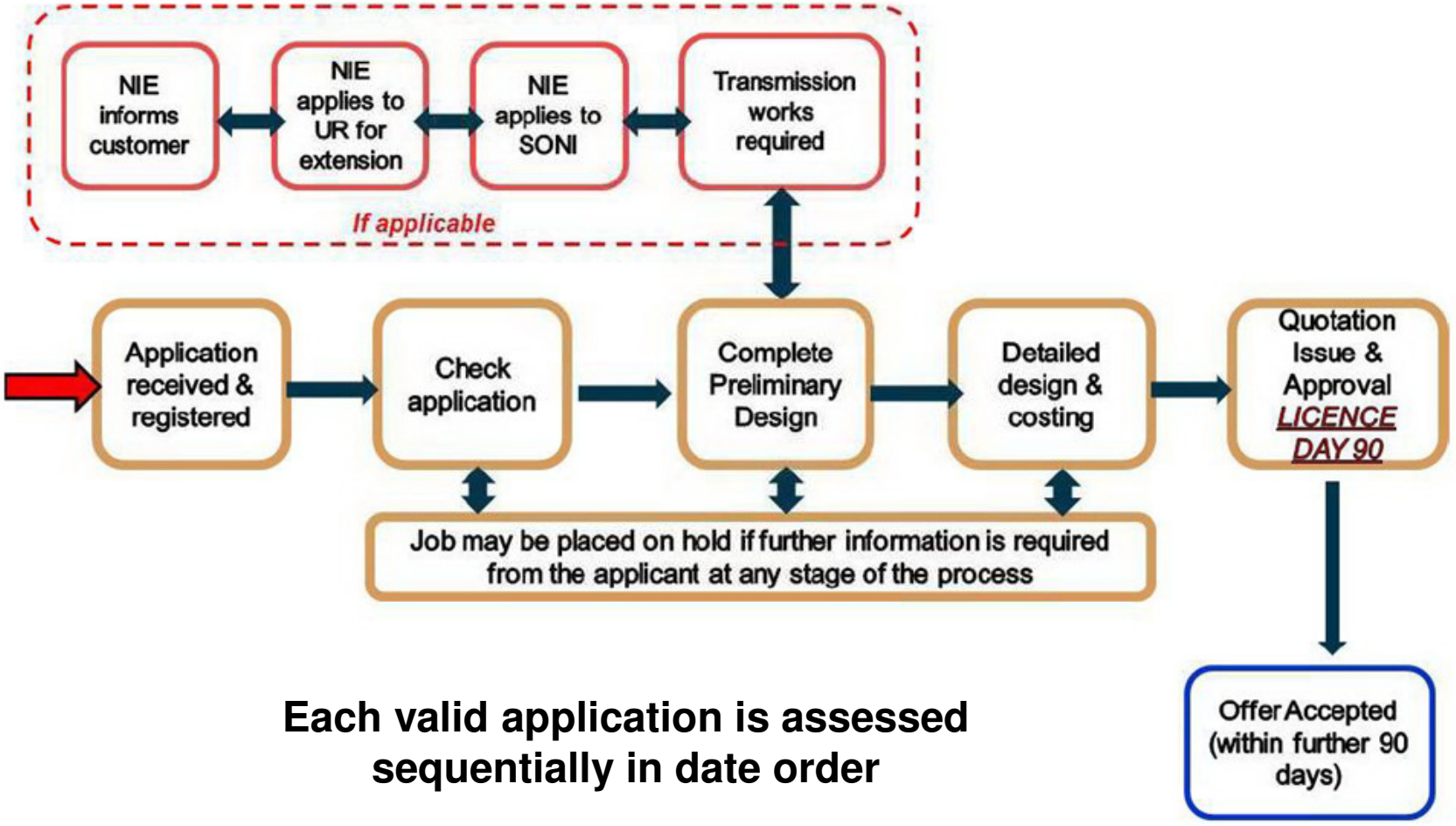
Industry Workshop

Joint presentation by NIE Networks and SONI

16 December 2015

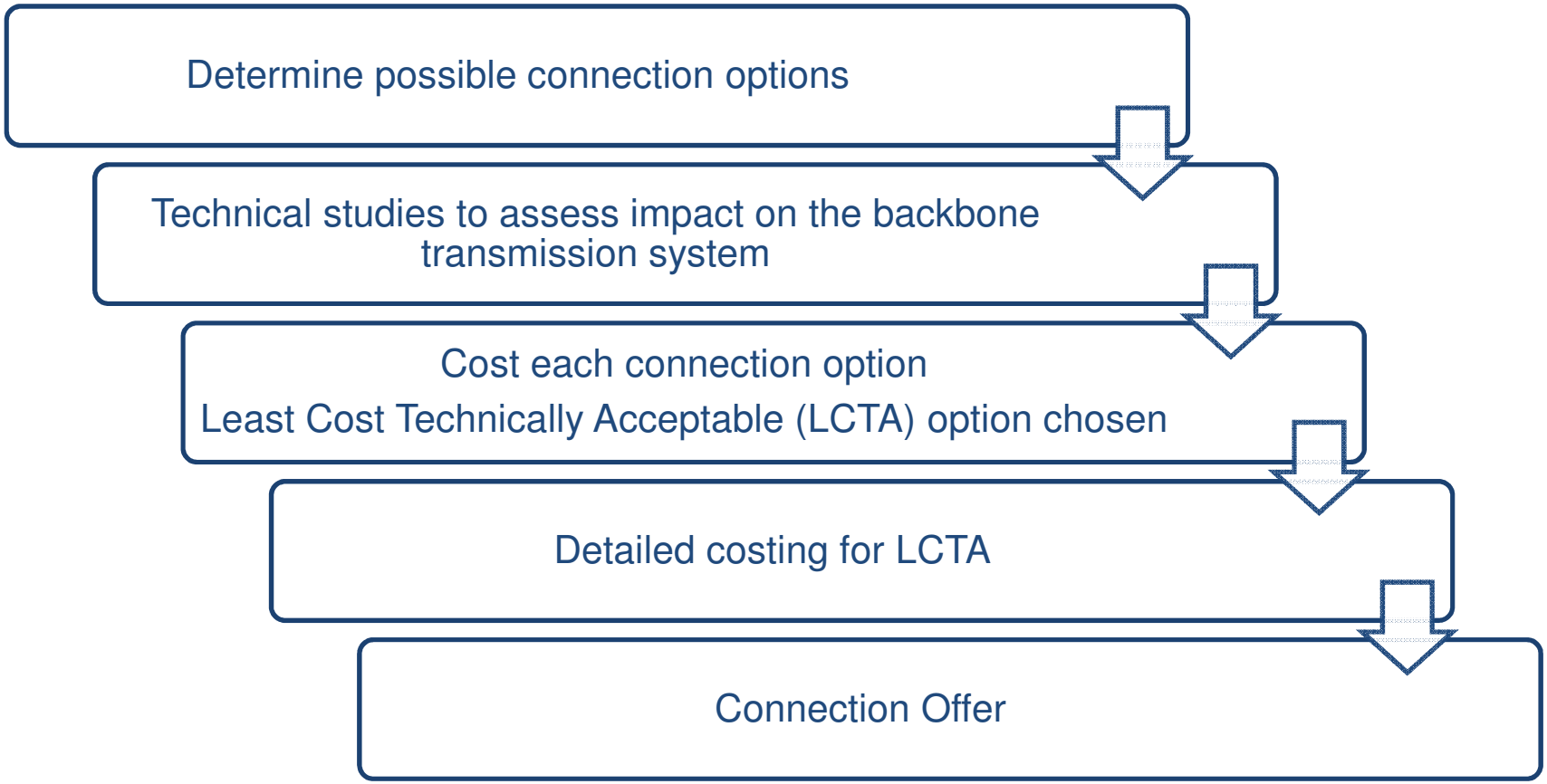
Existing Connection Offer Process

Distribution Assessment



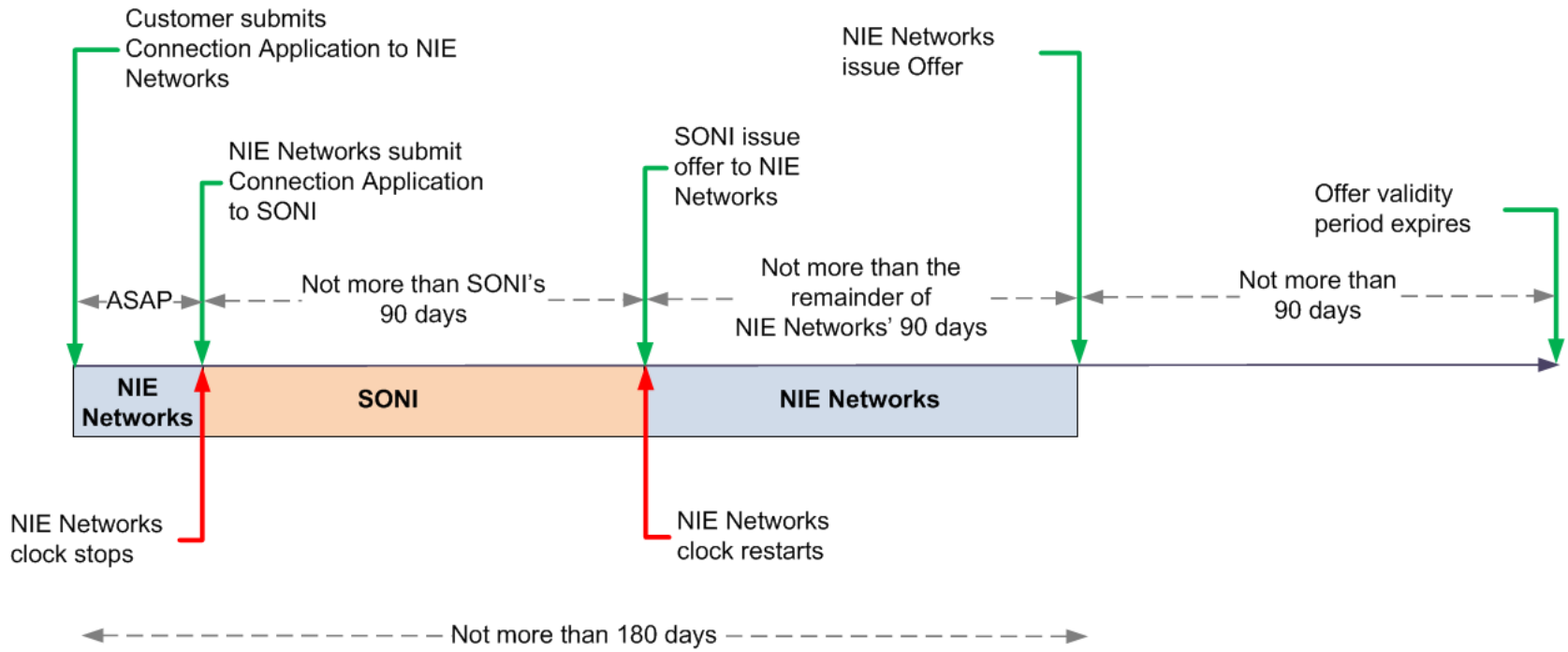
Each valid application is assessed sequentially in date order

Transmission Assessment



Each valid application is assessed sequentially in date order

Existing Timelines for connection offers



Progress to date on influx of applications

NIE Networks & SONI Progress

- Working together to determine the best way to deal with influx
- Presented the issues arising from the change in planning permission policy to UR
- UR granted an initial time extension until 31st May 2016
- A joint statement was issued on 17th November to inform industry of status of the offer process
- Preliminary distribution assessments are well advanced
- Assignment of connections to transmission nodes by NIE Networks and SONI
- All applicants informed of status of the offer process

Northern Ireland Electricity Networks

Highlighted the need for a change in connection process to deal with transmission impact

SONI

How do we Proceed?

Challenges if Applying Current Process

Less efficient use of time

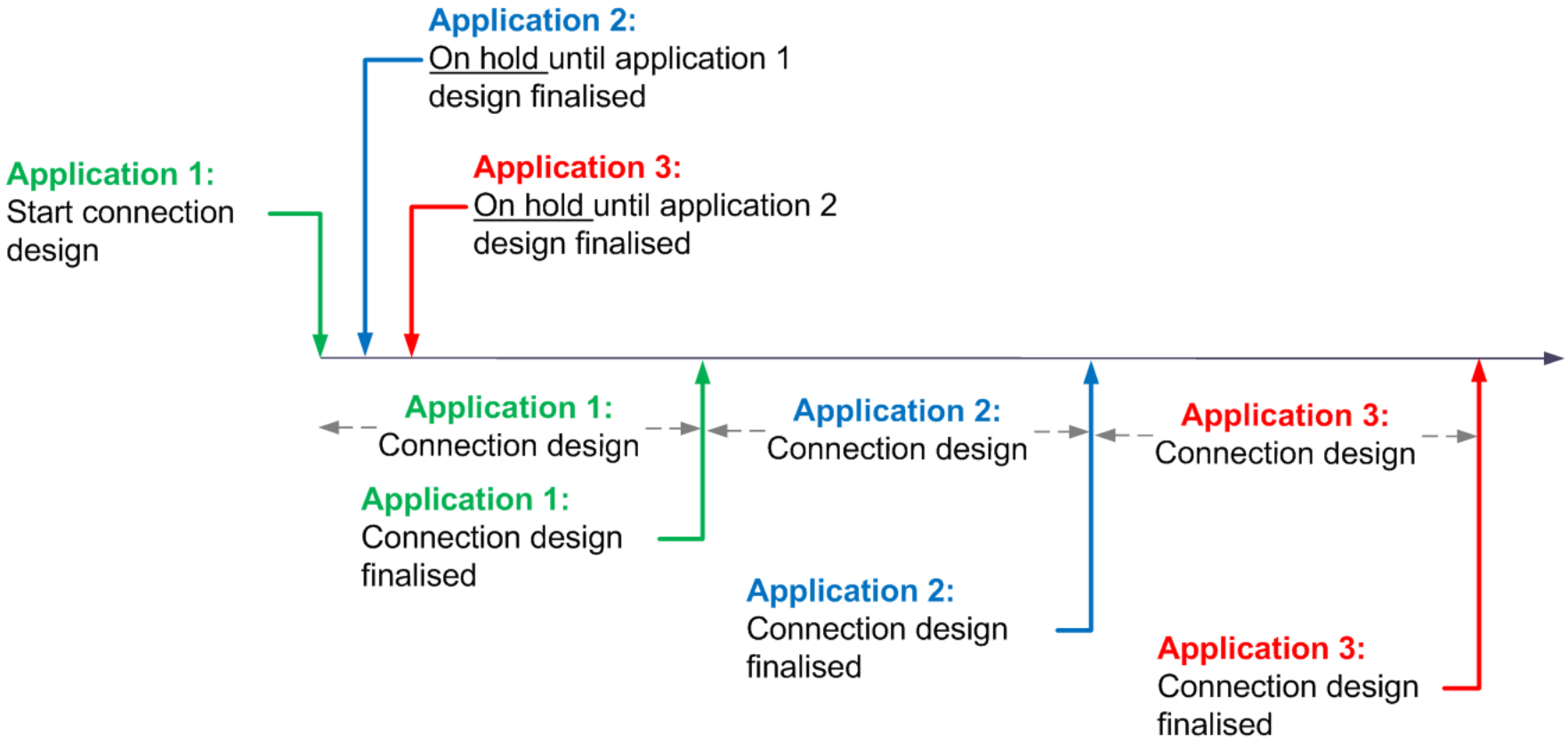
Withdrawals/ rejected offers

Challenges if Applying Current Process

Less efficient use of time

Withdrawals/ rejected offers

Less Efficient Use of Time (1)



Less Efficient Use of Time (2)

- Current connection offer process is sequential
- Connection designs are processed in series – not in parallel
- To illustrate:
  - Estimate c50 transmission assessments would be required
  - Transmission design can take up to 5 weeks
  - Sequencing 50 designs by a 5 week period would mean it would take years to complete the designs

To apply the individual and sequential approach would be less efficient given massive number of applicants at one time.

Challenges if Applying Current Process

Less efficient use of time

Withdrawals/ rejected offers

Withdrawals / Rejected Offers

- Uncertainty around:
  - RO closure, RO grace periods and implementation of CfDs
- Significant risk of connection applications not progressing
  - Business plans for some projects may rely on incentives
  - Connection delivery timescales may not be in line with customer expectations to avail of incentive schemes
- This was always a risk but was manageable. Now:
  - Volume of applications is significantly higher
  - No planning permission increases risk of withdrawals

If customers 'drop out' of the queue or reject offers at different times this will result in major reworking of subsequent offers

Proposed ‘Batch’ Approach

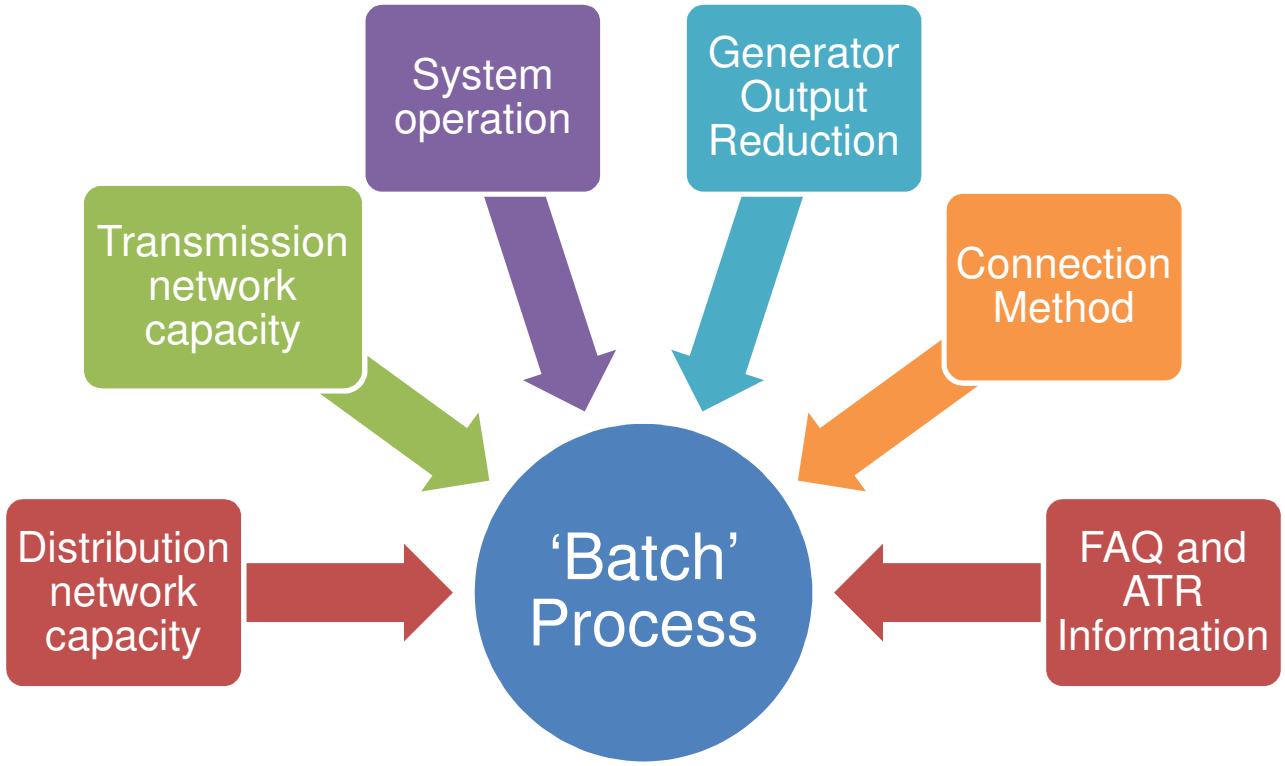
Proposed 'Batch' Approach

- The most efficient way of dealing with the influx of application is to treat all applications since August as 'simultaneous' applications
- To process the simultaneous application - apply a 'Batch' Process
- This will allow NIE Networks and SONI to:
  - Process the offers more quickly
  - Develop an efficient, coordinated and economic network
- To work effectively we believe the 'Batch' will need to be 'opened' and then 'closed'
- After which applications will not be processed until the current 'batch' has completed.
- If required a further batch can be opened

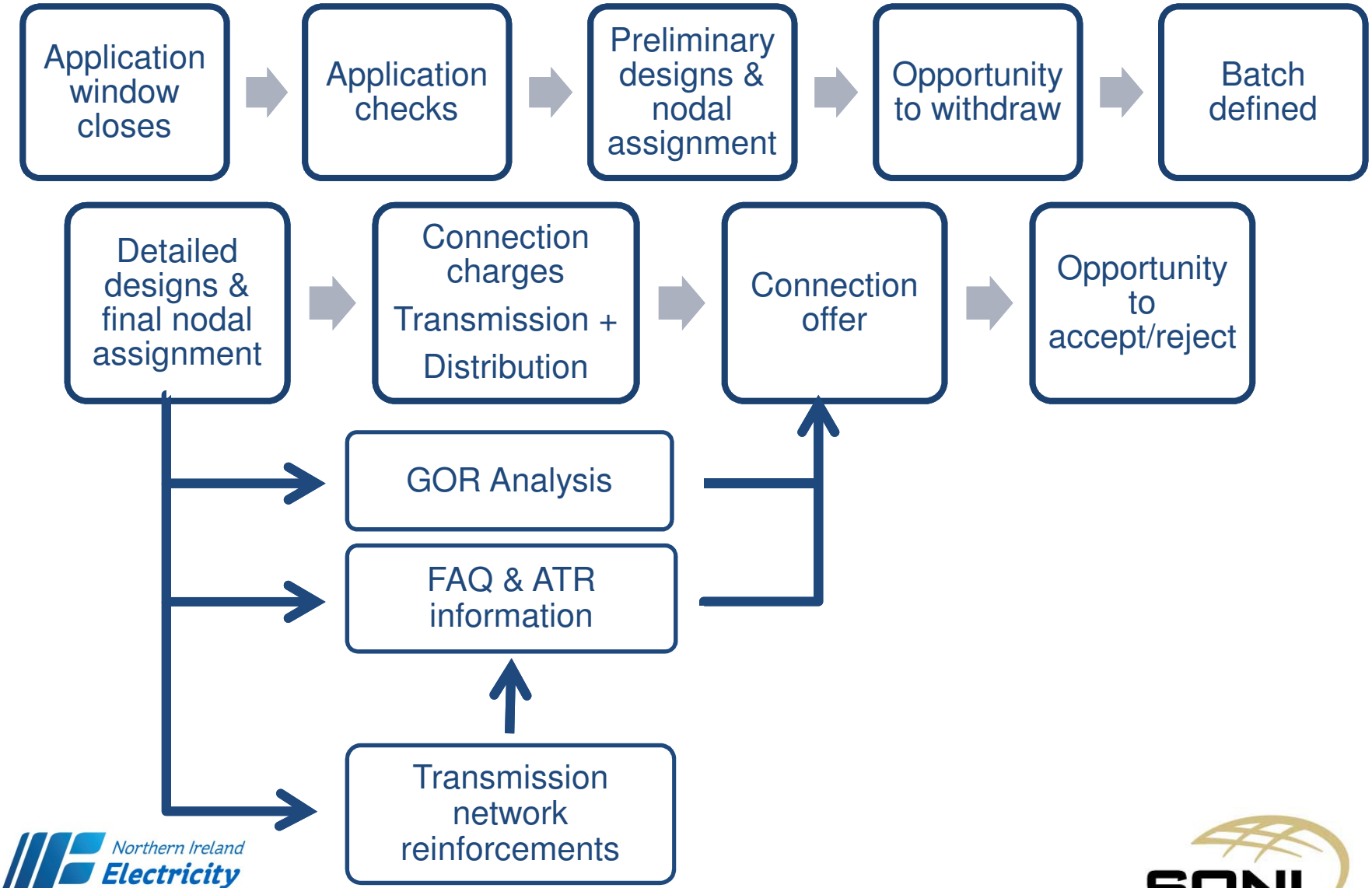
Co-ordination of applications, withdrawals,

acceptances /rejections of offers

Inputs to Proposed 'Batch' Process



Proposed 'Batch' Process



Northern Ireland Electricity Networks

SONI

Benefits of the 'Batch' Process

Co-ordinated Withdrawals

Defined Batch

More efficient use of time

Grouped Transmission Assessment

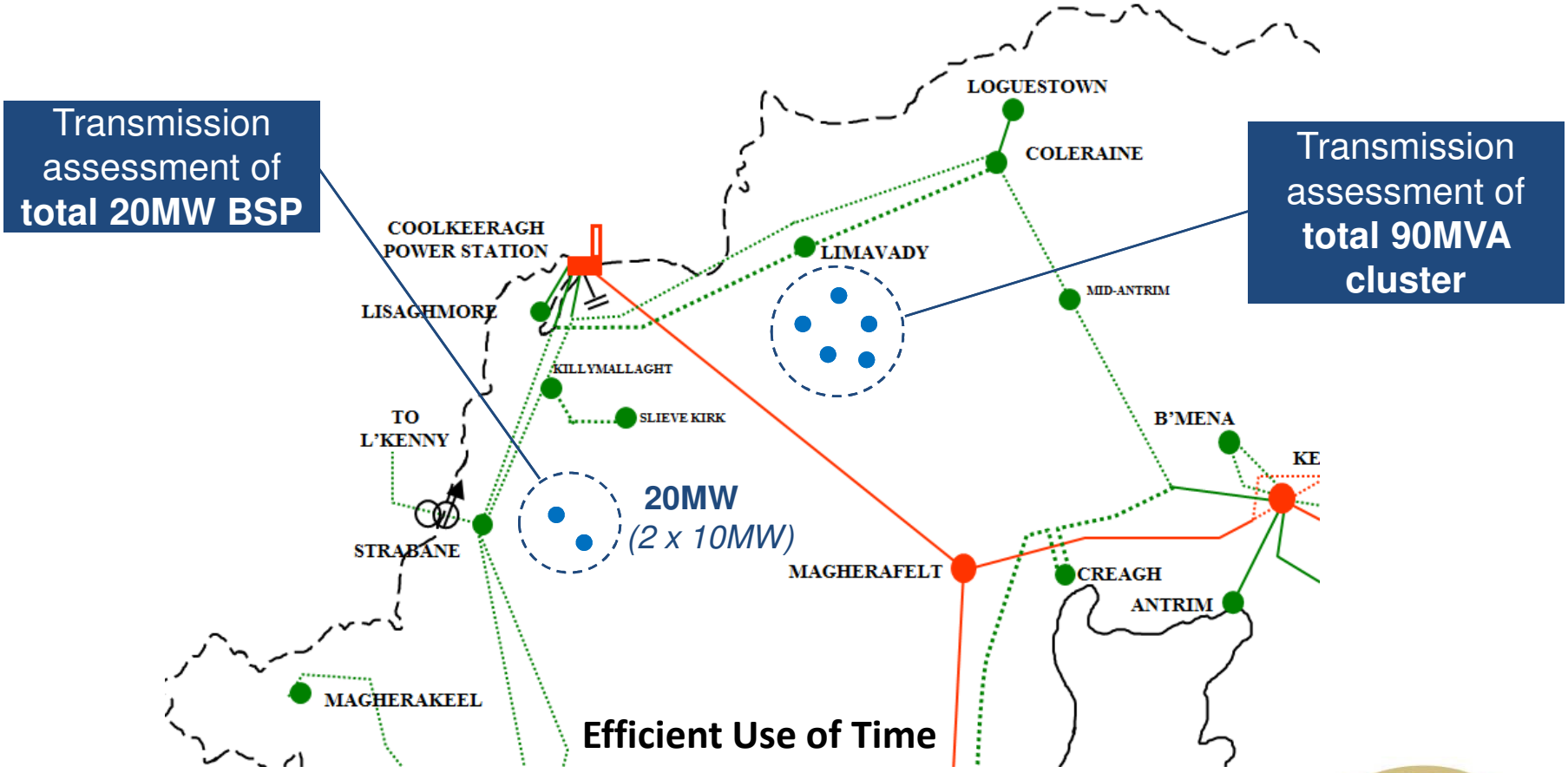
Give Customers the Opportunity to Withdraw Application

- Customers would be given the opportunity to withdraw their application
- After initial high level examination of likely connection arrangements
- NIE Networks and SONI can facilitate customer meetings or conference calls if required
- Decision to withdraw must be made by a certain date for a portion of application fee to be refunded
- If customer does not notify NIE Networks or SONI by the date specified, we will assume an offer is still required and the application fee will not be refunded.

Establish defined 'batch' of offers to issue and generators to be facilitated on the transmission and distribution systems.

Grouped Transmission Assessment

- Need to reduce the number of transmission assessments



Mechanism to Order Grouped Transmission Assessments

Queue Position for Individual Applications	Project	Cluster	Group at BSP	Queue Position for Transmission assessment
1	LS Gen A	Yes		
2	LS Gen B	Yes		1. Cluster (A+B+D+F)
3	**SS Gen C**			2. Generator C
4	LS Gen D	Yes		
5	LS Gen E		Yes	3. Capacity at BSP (E+I)
6	LS Gen F	Yes		
7	**SS Gen G**			4. Generator G
8	LS Gen H			5. Generator H
9	LS Gen I		Yes	

Challenges Associated with No Planning

Nugatory Investment

Hoarding Capacity

Entry to FAQ list

Challenges Associated with No Planning

Nugatory Investment

Hoarding Capacity

Entry to FAQ list

Risk of Delivery of Accepted Offers

- Historically accepted projects proceeded to be energised
- This risk has increased as projects might not gain planning
- This in turns does two things;
  - Increases the risk of hoarding network capacity
  - Cost of nugatory network investment work being passed to NI customer

Introduce Key Milestones

- To address these risks NIE Networks and SONI will consider:
  - Planning permission milestone within connection offers - would enable network capacity to be released if milestone is not met
  - Potential for MEC bond within distribution connection offers which will then be drawn down if an project does not proceed

Challenges Associated with No Planning

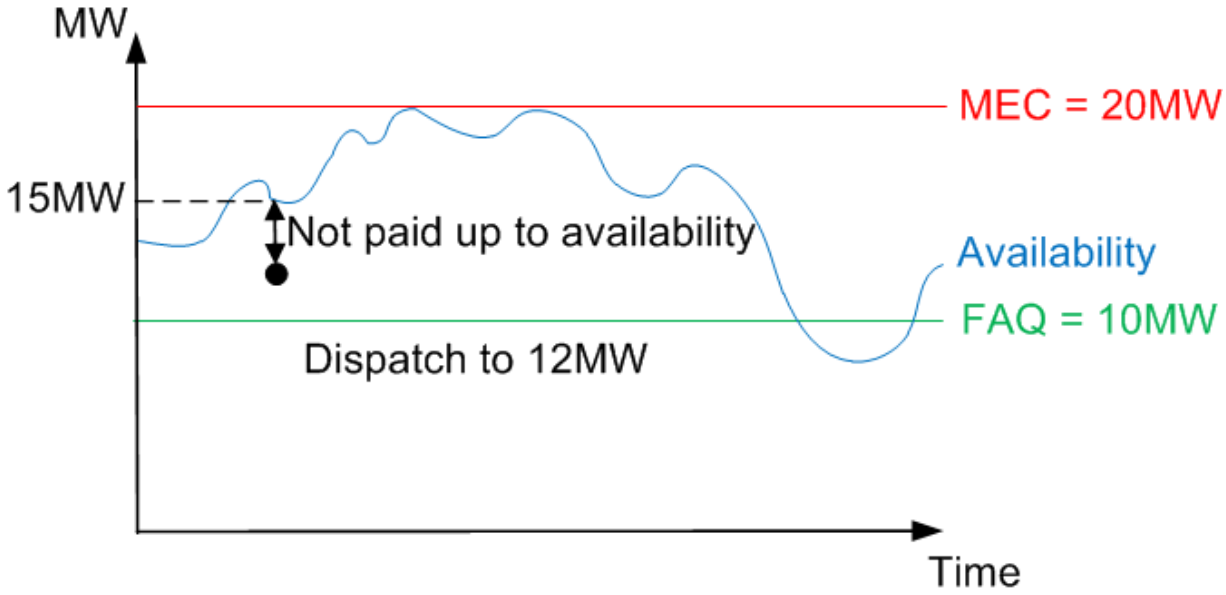
Nugatory Investment

Hoarding Capacity

Entry to FAQ list

What is FAQ?

- **FAQ** is **F**irm **A**ccess **Q**uantity
- Only applies to generators with MEC of 5MW and above
- Level of 'firm financial access' available on the transmission network
- **ATR** is **A**ssociated **T**ransmission **R**einforcement
- Network upgrades required to make a generator's FAQ = MEC



Entry to the FAQ List

- Entry into the FAQ list is on:
  - Connection application date if prior planning permission has already been secured at the time of application.
- As per SONI and NIE Networks July 2013 decision paper
- This rule was not changed with the NIE Networks change in policy
- The application queue is now disjointed from the FAQ list
- There is no mechanism for the applications without planning to enter the FAQ list

Amend Rule for Entry into FAQ List

- The ruleset would need to be amended, and subject to consultation, the proposal is that entry into the FAQ list is the earliest date of:
  - If prior planning permission has already been secured at the time of application, entry to the FAQ list is on connection application date.
  - If prior planning permission has not been secured at the time of application, entry to the FAQ list is on the date that SONI is formally notified that the project applied for has secured planning permission.
  - If connection application was made after the NIE Networks planning permission policy change and planning permission has been secured between connection application date and today, entry to the FAQ list is on the date that planning permission was secured.

Timelines

Timeline based on Current Situation

- We believe the 'batch' process will create efficiencies however;
- Significant time required for SONI and NIE Networks to progress the transmission and distribution assessments in coordinated manner
- Further work will continue in the interim to confirm assignment of connections to transmission nodes
- Full transmission assessment process cannot start until consultation concludes and transmission assessment scope confirmed
- Offers will not be issued by May 2016 – more detailed update on timelines to be advised at further workshop in February 16

Feedback

NIE Networks and SONI will seek your views

1. Should SONI remove need for planning permission pre-requisite?
2. Can the industry suggest
   a. Improvements or alternatives to proposed 'batch' process?
   b. Areas where further clarification is required?
3. Does industry need certainty of network investment to accept offers?
4. SONI and NIE Networks need to prevent hoarding of capacity / nugatory network investment. Do you have any thoughts on the following safeguards?
   a. Specify planning permission milestones within offers
   b. Introduce MEC bonds into distribution connection offers
5. For applications of 5MW and above,
   a. Is FAQ / ATR information essential for a connection offer to be accepted?
   b. Is constraint / curtailment information sufficient?
   c. Is there need to reduce threshold for controllable generation below 5MW?

Consultation starts now

Email: Connections@soni.ltd.uk

Next Steps

1. Consultation from now to end February
   - Presentation available from this week
   - Consultation paper issued early new year
   - Industry workshop held mid February if required
   - Consultation closed by the end of February
2. In the meantime
   - Preliminary designs will continue
   - Review of legal and charging arrangements
   - Facilitate withdrawal from the queue if requested
3. Confirm ‘way forward’ in March
   - Subject to consultation outcome aligning to batch approach

Thank-you