

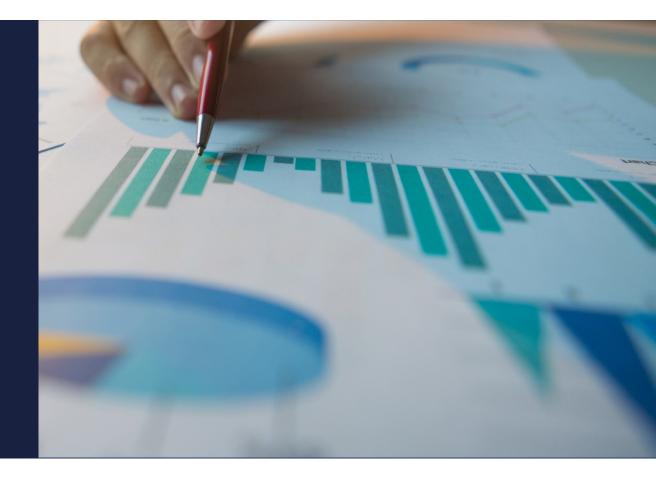
Energy supply security during the energy transition

DATE 17th September 2022

VENUE

Dublin Economic Workshop

AUTHOR Muireann Lynch



Overview

- Considerations for security
- Electricity supply security
- Gas security
- Decarbonisation agenda

Provide research context





Energy is inelastic



- Energy is inelastic
- Energy is weakly substitutable



- Energy is inelastic
- Energy is weakly substitutable
- Energy is an essential good



- Energy is inelastic
- Energy is weakly substitutable
- Energy is an essential good

Vectors differ in their storage capacity



- Energy is inelastic
- Energy is weakly substitutable
- Energy is an essential good

- Vectors differ in their storage capacity
- Option value of storage?



- Energy is inelastic
- Energy is weakly substitutable
- Energy is an essential good

- Vectors differ in their storage capacity
- Option value of storage?

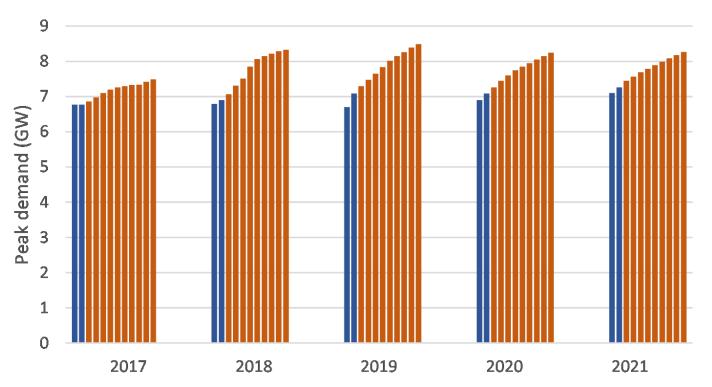
@ESRIDublin

Value of lost load at higher levels of electrification



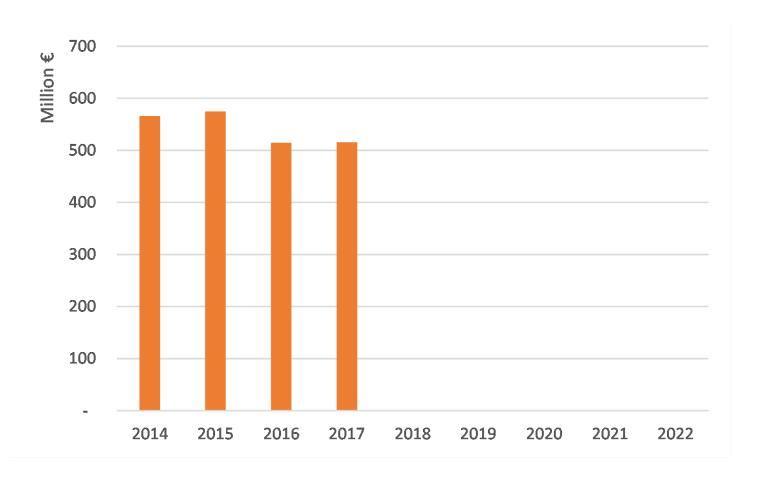
Energy demand is generally increasing





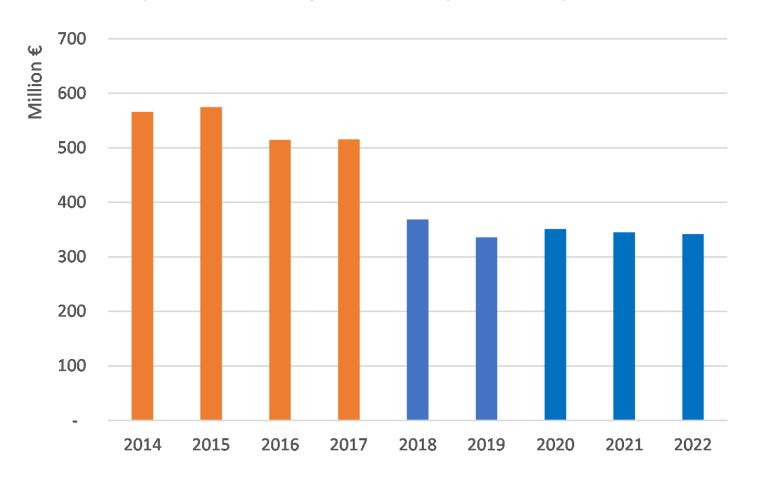


Capacity procured under price-based mechanism





...followed by a redesign to a quantity mechanism







A Coimisiún um Rialáil Fóntais

Commission for Regulation of Utilities

Electricity Network Tariffs 2022/23 – National Energy Security Framework Response Proposals



 How to design an efficient capacity auction at high RES-E?

@ESRIDublin



How to design an efficient capacity auction at high RES-E?

#ESRIevents

Should we split markets altogether?



LNG terminal would enhance price security (Russo and Devine, 2017)



- LNG terminal would enhance price security (Russo and Devine, 2017)
- Ideological opposition to this fact



- LNG terminal would enhance price security (Russo and Devine, 2017)
- Ideological opposition to this fact
- Energy infrastructure does not have a good track record in Ireland



- LNG terminal would enhance price security (Russo and Devine, 2017)
- Ideological opposition to this fact
- Energy infrastructure does not have a good track record in Ireland

Impact of planning on energy security?



Reluctance to embrace gas has led to increased coal



- Reluctance to embrace gas has led to increased coal
- ESG includes gas as "green" activity



- Reluctance to embrace gas has led to increased coal
- ESG includes gas as "green" activity



- Reluctance to embrace gas has led to increased coal
- ESG includes gas as "green" activity
- Climate Action Plan includes 2000MW investment in gas generation

#ESRIevents



- Reluctance to embrace gas has led to increased coal
- ESG includes gas as "green" activity
- Climate Action Plan includes 2000MW investment in gas generation
- "The most secure unit of energy is the one you don't use"



- Reluctance to embrace gas has led to increased coal
- ESG includes gas as "green" activity
- Climate Action Plan includes 2000MW investment in gas generation
- "The most secure unit of energy is the one you don't use"

 Energy efficiency and rebound in a carbonconstrained world



Questions

Muireann.lynch@esri.ie @mu_lynch