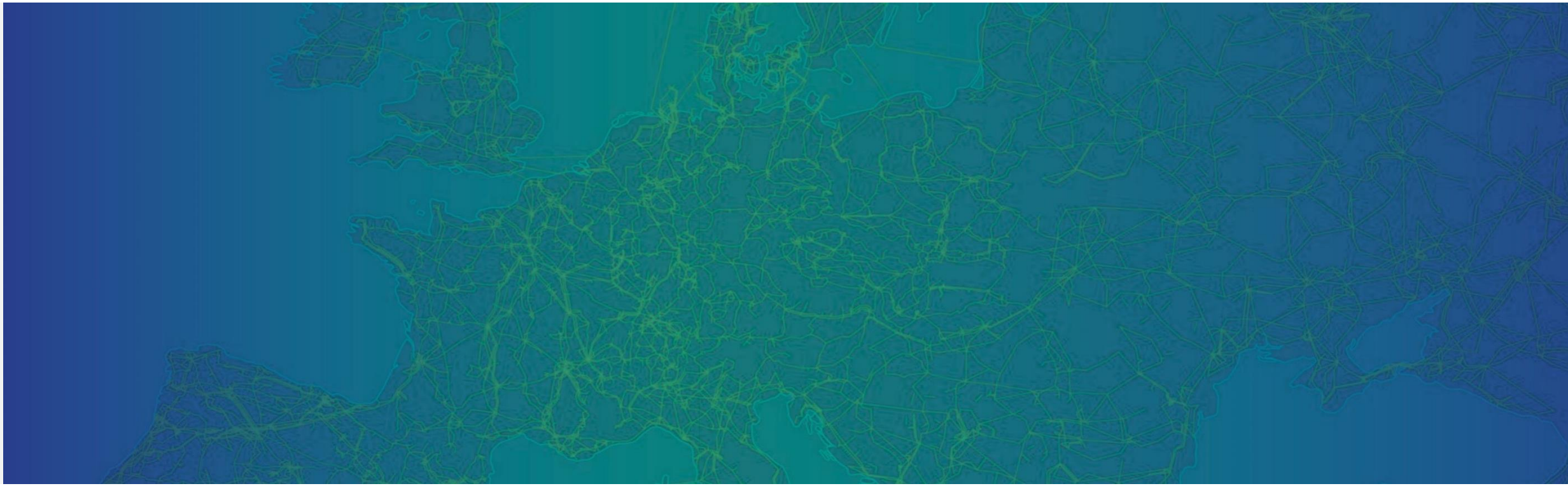
2030 Market Design - Stakeholder Webinar

Presentation and discussion of Public Consultation results



entsoe

Reliable Sustainable Connected

Webinar Agenda

9.30 - Welcome & Introduction - *Peter Scheerer* (ENTSO-E, Market Committee Vice Chair)

9.40 - Session 1: Wholesale Markets

- ENTSO-E summary of consultation responses - *Gilles Etienne* (ENTSO-E, WG MDRES Convenor) - 10'
- Stakeholders' views: **SmartEn, Europex, WindEurope** – 15'
- Open floor debate – 20'

10.25 - Session 2: Congestion Management & Spatial Granularity

- ENTSO-E summary of consultation responses **-** *Gerard Doorman* (ENTSO-E, PT 2030 Market Design Convenor) - 10'
- Stakeholders' views: **EFET, BMWi, RAP – 15'**
- Open floor debate – 20'

- 15' Coffee Break -

11.25 - Session 3: Adequacy & Investment Signals (45')

- ENTSO-E summary of consultation responses - Marco Foresti (ENTSO-E Secretariat, Market Design Manager) - 10'
- Stakeholders' views: **EURELECTRIC, SolarPowerEurope, TradeRES** – 15'
- Open floor debate – 20'

12.10 - Conclusions & Next Steps – *Gilles Etienne* (ENTSO-E, WG MDRES Convenor) - **20'**

Welcome & Introduction

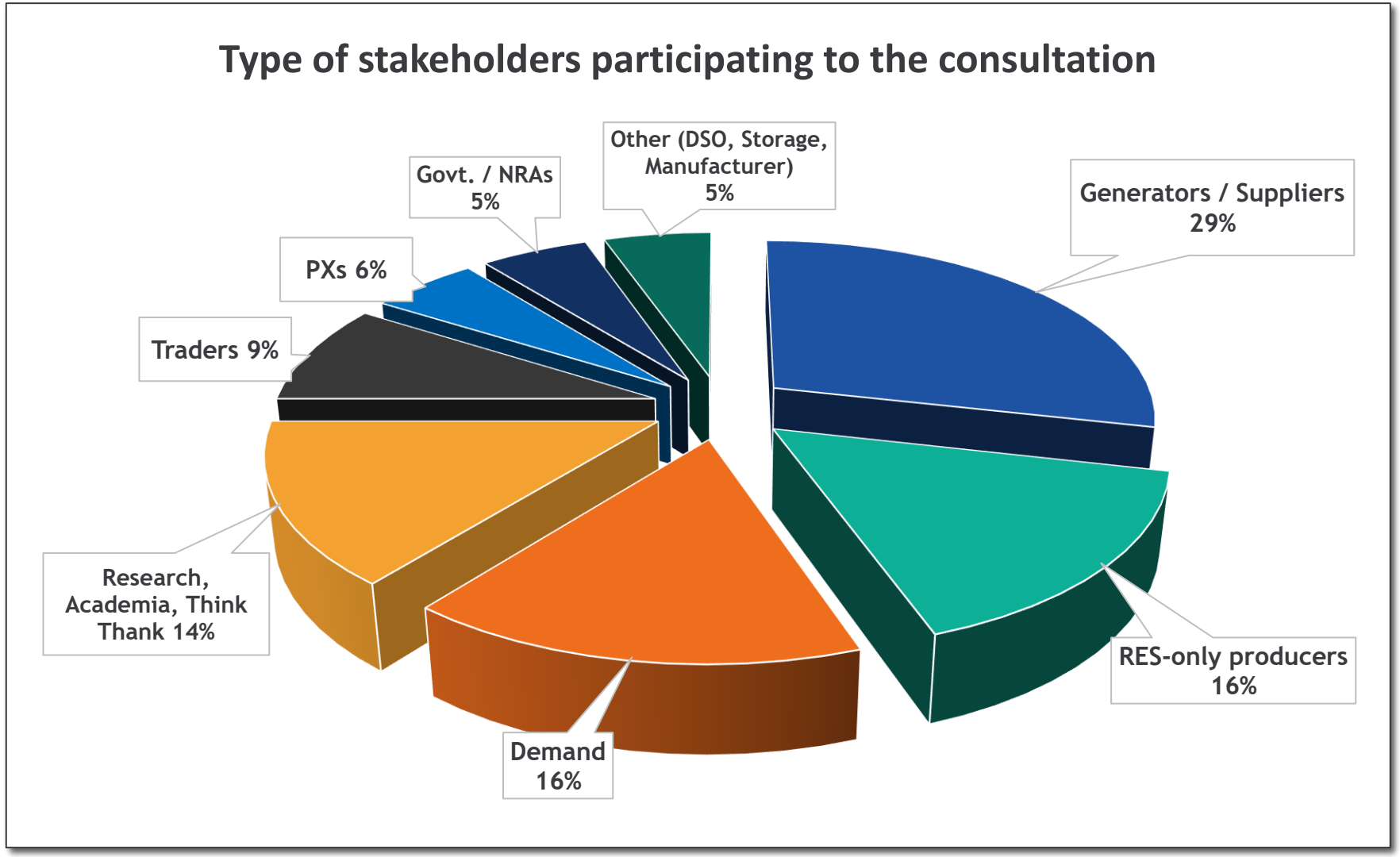
Peter Scheerer

ENTSO-E Market Committee Vice Chair

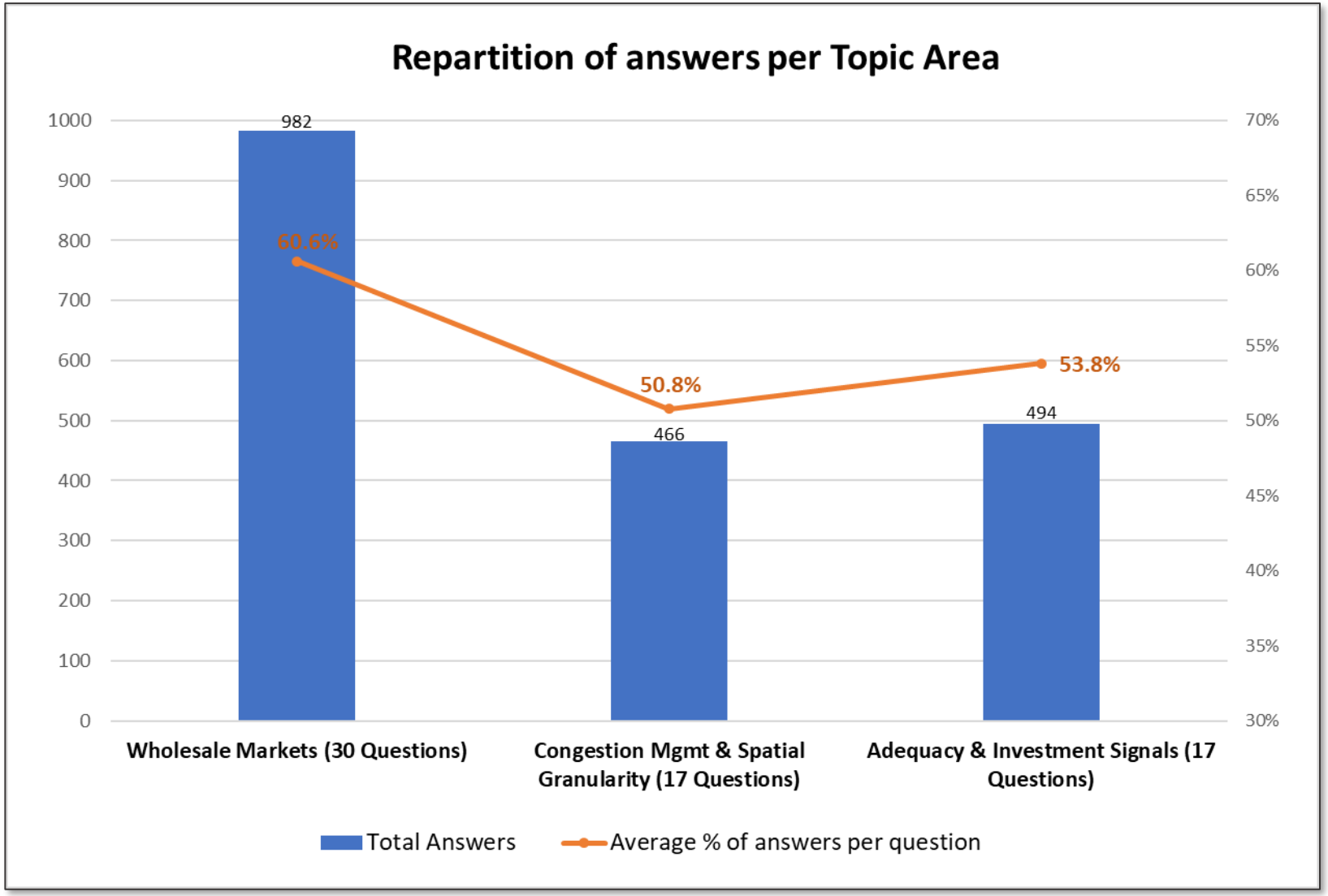
2030 Market Design: Discussion Paper for stakeholder feedback

- Are European **electricity markets equipped to meet the 2030 energy and climate objectives**? Could their design be improved?
- ENTSO-E has looked into **several options** across different market design dimensions, trying to anticipate **future challenges** and possible solutions
- Our objective is to **trigger a debate** so to inform policymakers, offering TSOs technical expertise and experience as neutral market facilitators
- Not a position paper but a "discussion paper" for consultation, to **collect input and additional ideas** from stakeholders
- **ENTSO-E & TSOs are fully committed to the CEP implementation** and employing the vast majority of their resources to complete our legal mandates
- However, **new & more ambitious policy objectives** require to **explore** possible **further evolutions** to be introduced **after the CEP implementation.**
- **Stakeholders input** to the market design consultation will also help ENTSO-E and TSOs identify **priority areas of work and analysis**.

Consultation respondents: 55 stakeholders



Consultation responses: 1942 answers



Questions with most responses:

Wholesale Markets:

- DSR Barriers (Q. 14)
- Intraday Auctions (Q. 16)
- Balancing procurement (Q. 27)

Congestion Mgmt:

- Zonal model (Q. 38)
- Nodal Models (Q. 46)
- Local Flexibility Markets (Q. 53)

Adequacy & Investment Signals

- Capacity Mechanisms vs. Strategic Reserves vs. EO Markets (Q. 51)
- Scarcity Pricing (Q. 55)
- RES Supports Mechanisms (Q. 63)

Publication and Summary of Consultation Responses

- The complete set of stakeholders' responses to the 2030 Market Design Consultation has been published on our website here: https://consultations.entsoe.eu/markets/options-for-the-design-of-european-electricity-mar/
- A small minority of responses (6) has not been published because marked confidential or submitted only via email without explicit consent for publication
- ENTSO-E will present today a summary of stakeholders' responses to selected questions
- To allow discussing the 1942 responses during the 3h of this workshop we have:
  - **Selected questions**/topics with most responses and/or different views
  - **Summarised** most relevant messages in each individual response and group them in macro-categories to identify commonalities and differences
  - Simplified **graphical representation** via charts and "word clouds" to give the audience a quick overview of the key-takeaways
- Should you wish to raise additional points please use **sli.do** and we will select the most voted questions during the open-floor debate

Wholesale Markets

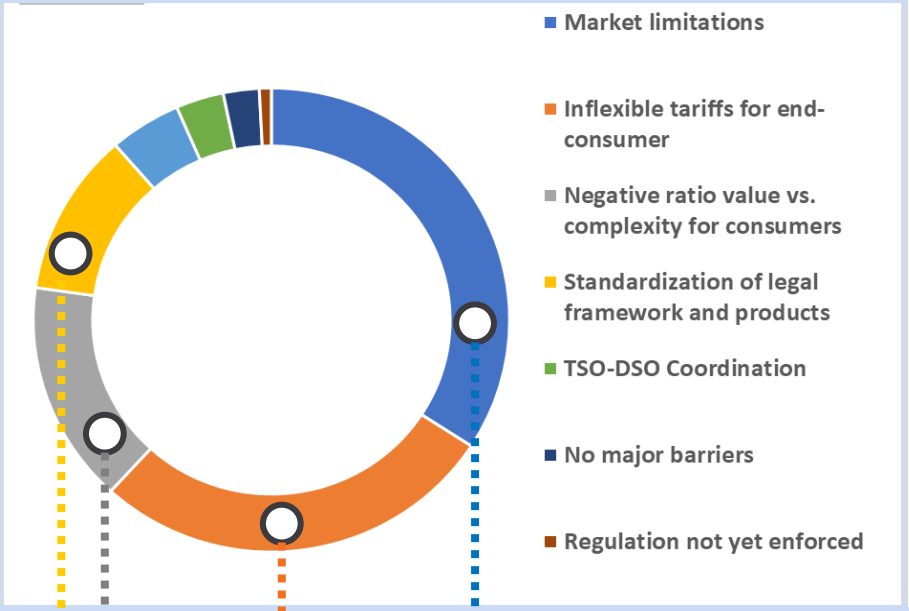
Wholesale Markets
Summary of consultation responses

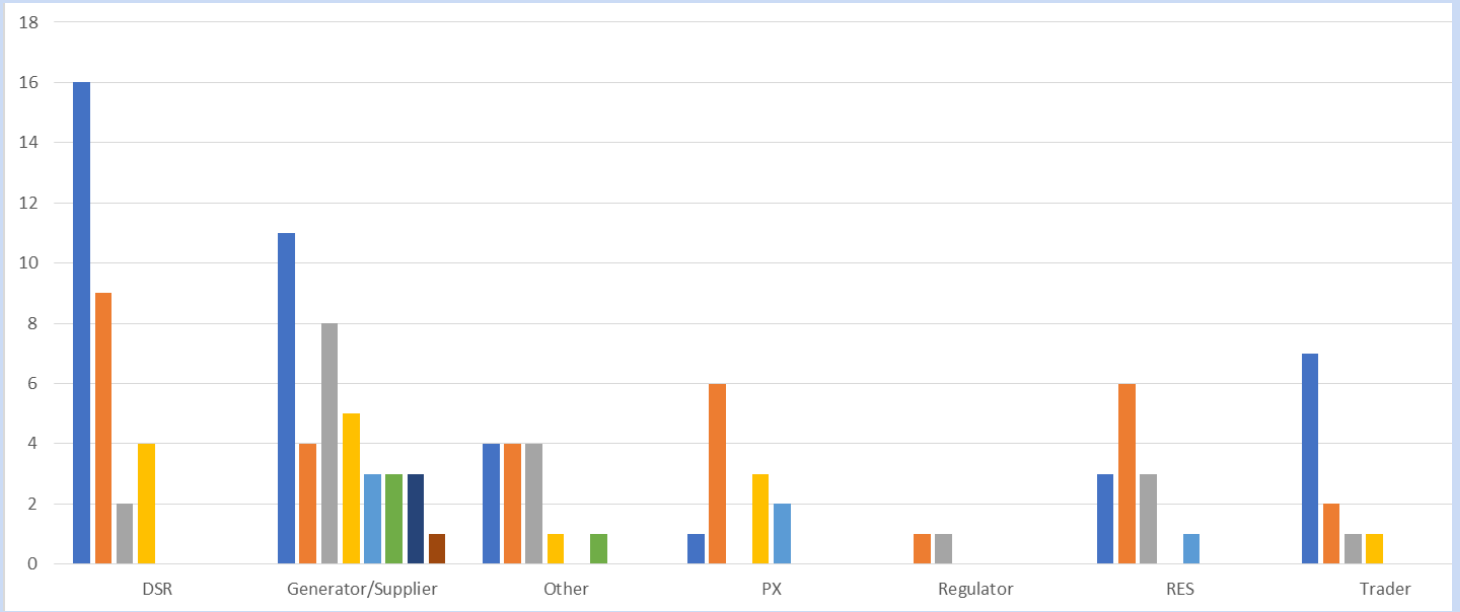
Gilles Etienne

ENTSO-E Working Group Market Design & RES Convenor

Demand Side Response participation in wholesale markets

Q. 14: Which barriers?





Q. 15: Which solutions?

Market limitations → DSR should be able to **participate to all markets** incl. balancing & CRMs. Market requirements to be adapted to ensure fair competition. **Scarcity pricing** may produce more predictable price signals

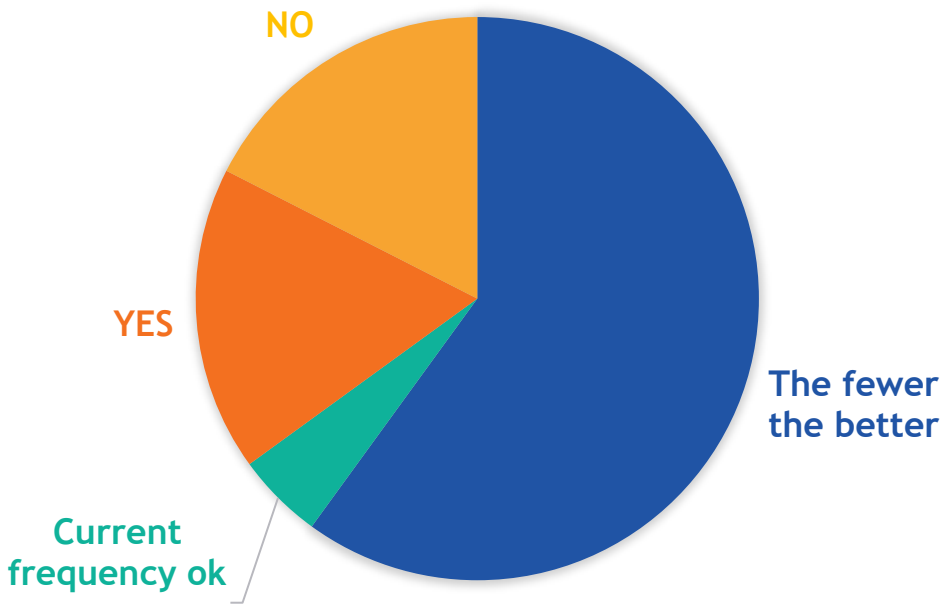
Inflexible tariffs for end consumers → Introduce more dynamic pricing and tariffs by **adapting charges, taxes and fees to value the flexibility of all assets**.

Negative ratio value vs Complexity for consumers → **Dynamic prices** and implicit DSR are good way to improve the valuation of the DSR.

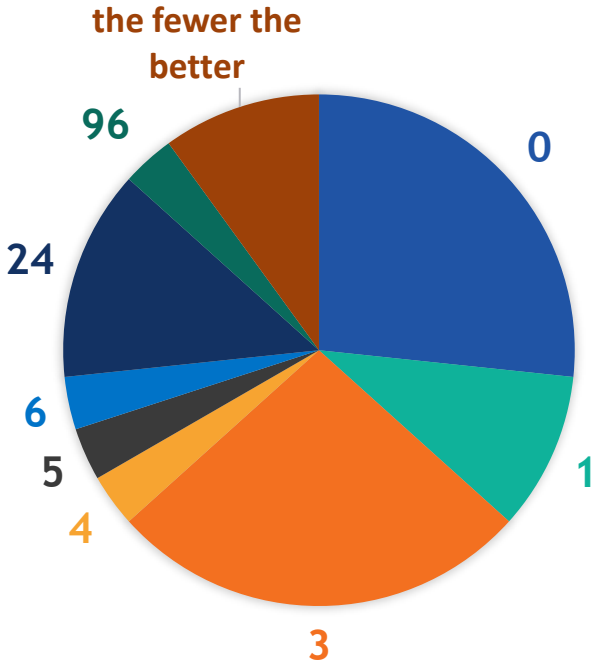
Standardisation of legal framework and products → Create an **harmonized framework** of the relations between suppliers, aggregators and customers; and **standardized products**.

Intraday Auctions

Q.16: SHOULD THE NUMBER OF ID AUCTIONS INCREASE?



Q.17: ADEQUATE NUMBER OF ID AUCTIONS

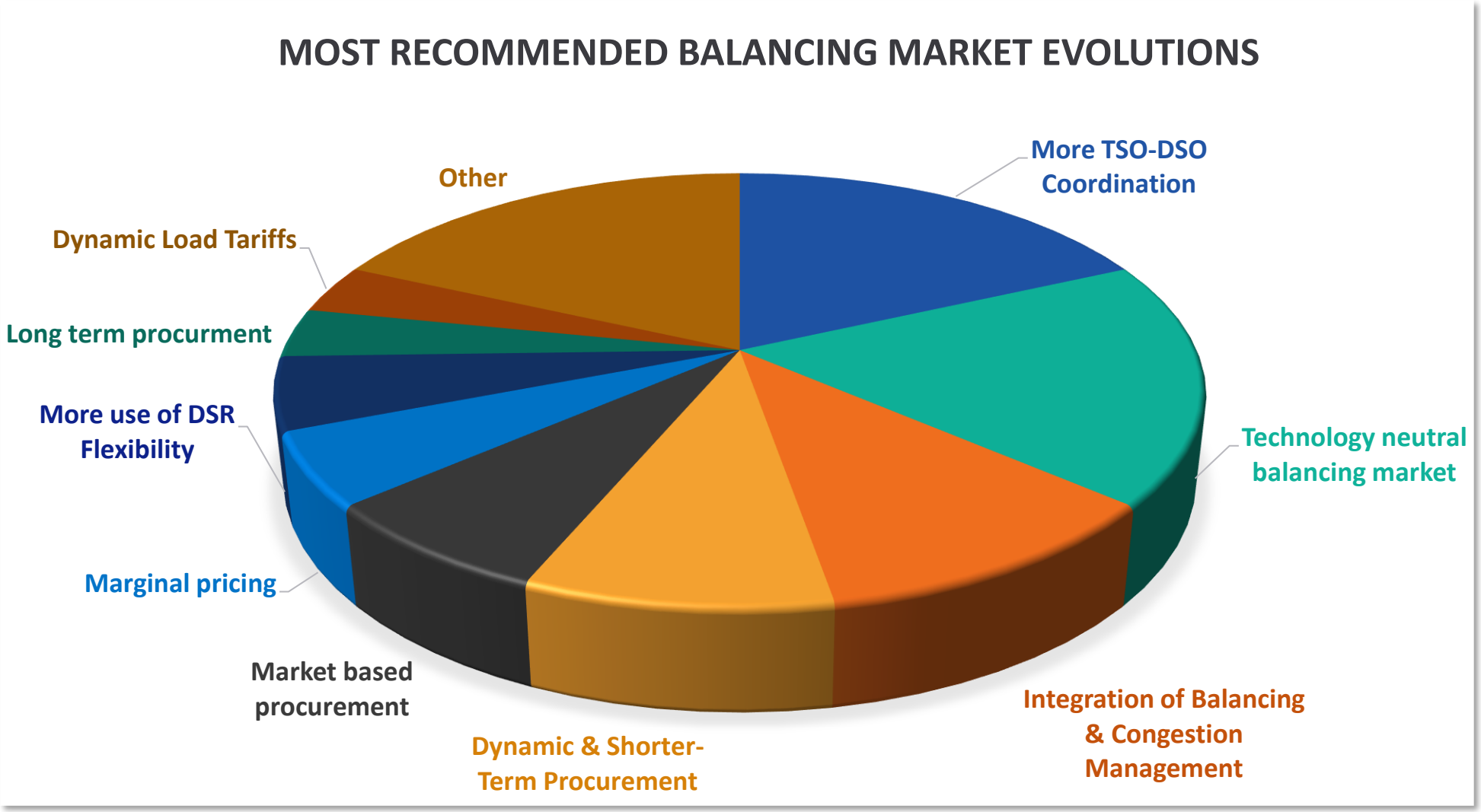


Overall there is **little appetite to go towards higher frequency ID auctions**. It is highlighted that IDAs should only take place after a recalculation of the capacity and as close to the real time as possible. Consensus on the **need to keep continuous trading**.

Balancing

QUESTION 20

How can TSO procurement of balancing services evolve to be fit for the new power system of 2030?



Co-optimisation of energy and balancing capacity

QUESTION 24

Which potential benefits or drawbacks do you foresee with the co-optimisation of energy and balancing capacity?

Benefits

- More efficient procurement [15]
- Higher welfare [4]
- Use of storage [4]
- No arbitrage [1]

Drawbacks

- More complex market [10]
- Detrimental effect on DA market [8]
- Implementation challenges [4]
- Still two merit orders [4]
- Less transparency [2]
- Risk of price increase [1]

Provision of Non-Frequency Ancillary Services by RES (Q.12)

QUESTION 12

What do you consider as best practice to the ensure effective provision of voltage control and other non-frequency AS by RES?

TSOs procurement of non-frequency AS should be **Market based, transparent & technology neutral**. Technical barriers need to be reduced while allowing pooling of different assets and provision by hybrid assets (RES + storage). A small minority mentioned mandatory connection requirements and long-term contracts as possibilities.

Wholesale Markets
Stakeholders Views

SmartEn

Andrés Pinto-Bello

Wholesale Markets
Stakeholders Views

Europex

Edmund Beavor

Europex Association of European Energy Exchanges

Wholesale Markets
Stakeholders Views

WindEurope

Vasiliki Klonari

Congestion Management & Spatial Granularity

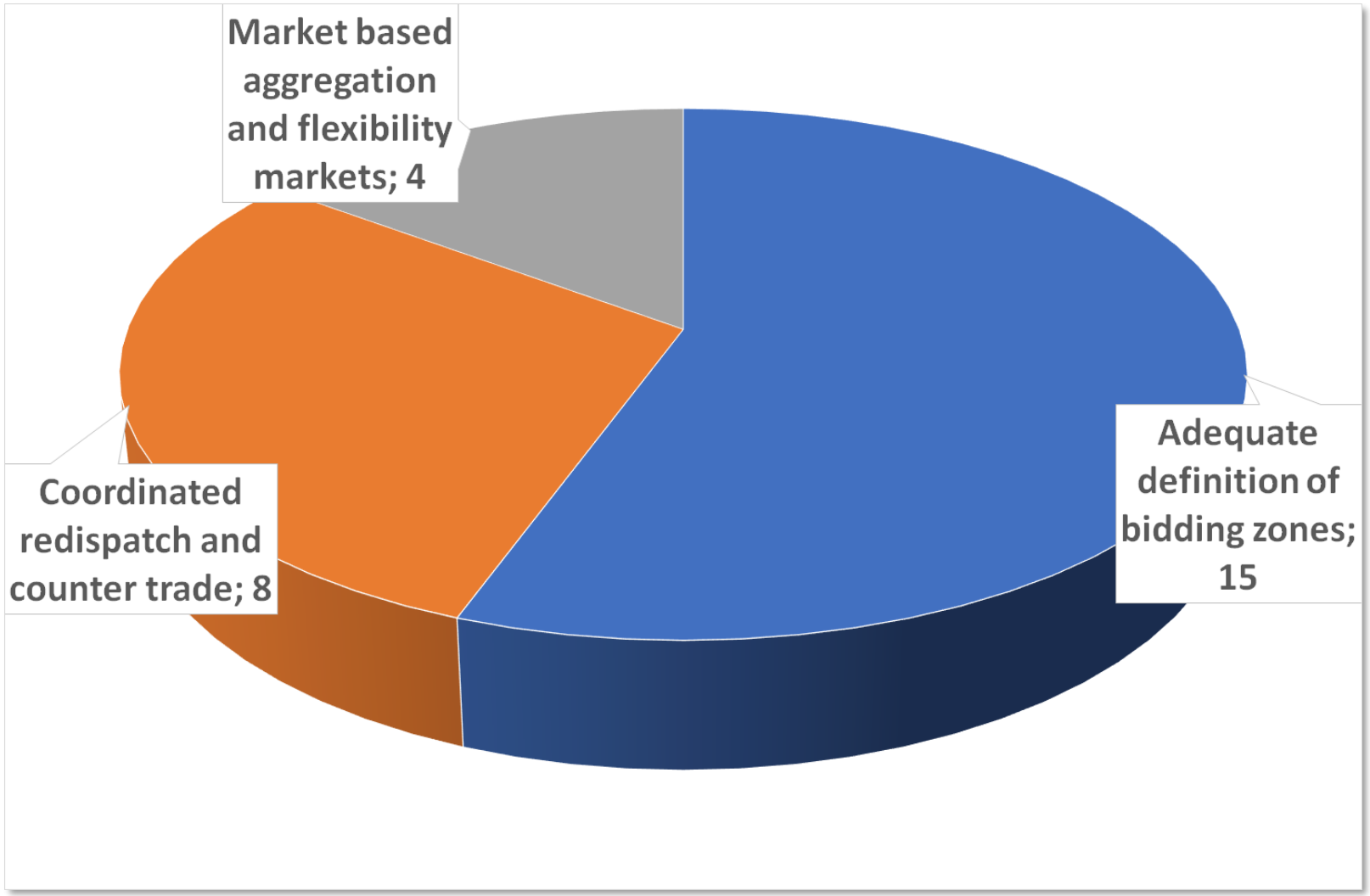
Congestion Management & Spatial Granularity
Summary of consultation responses

Gerard Doorman

ENTSO-E Project Team 2030 Market Design Convenor

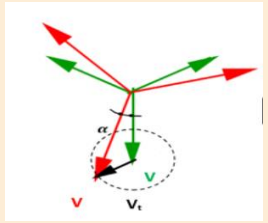
Zonal Models: Large majority believes **current model** + CEP implementation is **suitable for 2030**; **some adaptations needed**

QUESTION 39
What is the most important feature of the current zonal market design that must be adapted to make it future proof?



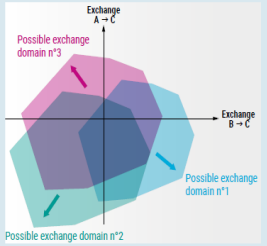
Possible enhancements to Zonal Models: generally positive feedback to described options but further analysis needed

QUESTIONS 40-41-42



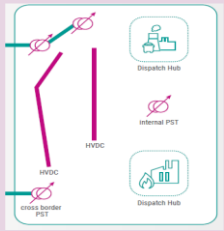
PST and internal HVDC optimised in capacity allocation

+ Could increase social welfare, but further analysis needed
- Fear of increased complexity (transparency & clearing algorithm)



Topological flexibilities in the market coupling

+ Theoretically increased optimality of solution, more analysis needed
- Fear of increased complexity (transparency & clearing algorithm)



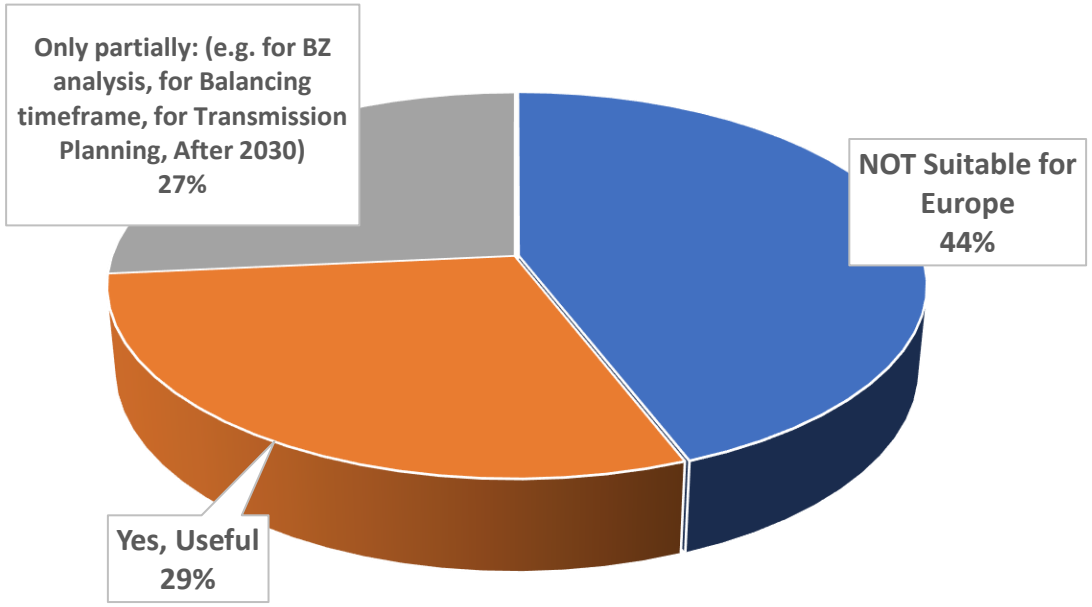
Dispatch hubs

+ Most clearly in favour (but more analysis needed) [11]; but also stronger opinions against [6]
- Portfolio bidding, complexity, different prices in BZ

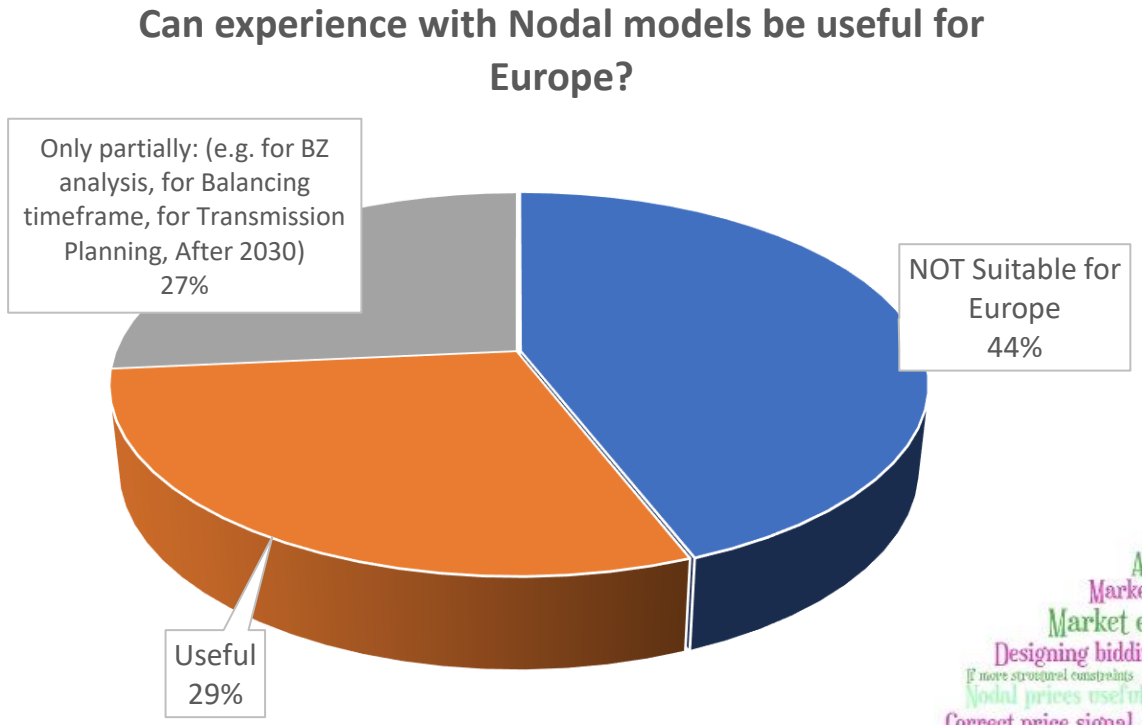
entsoe

Nodal Models: Majority believes they are **not suitable for European DA market**

Can experience with Nodal models be useful for Europe?

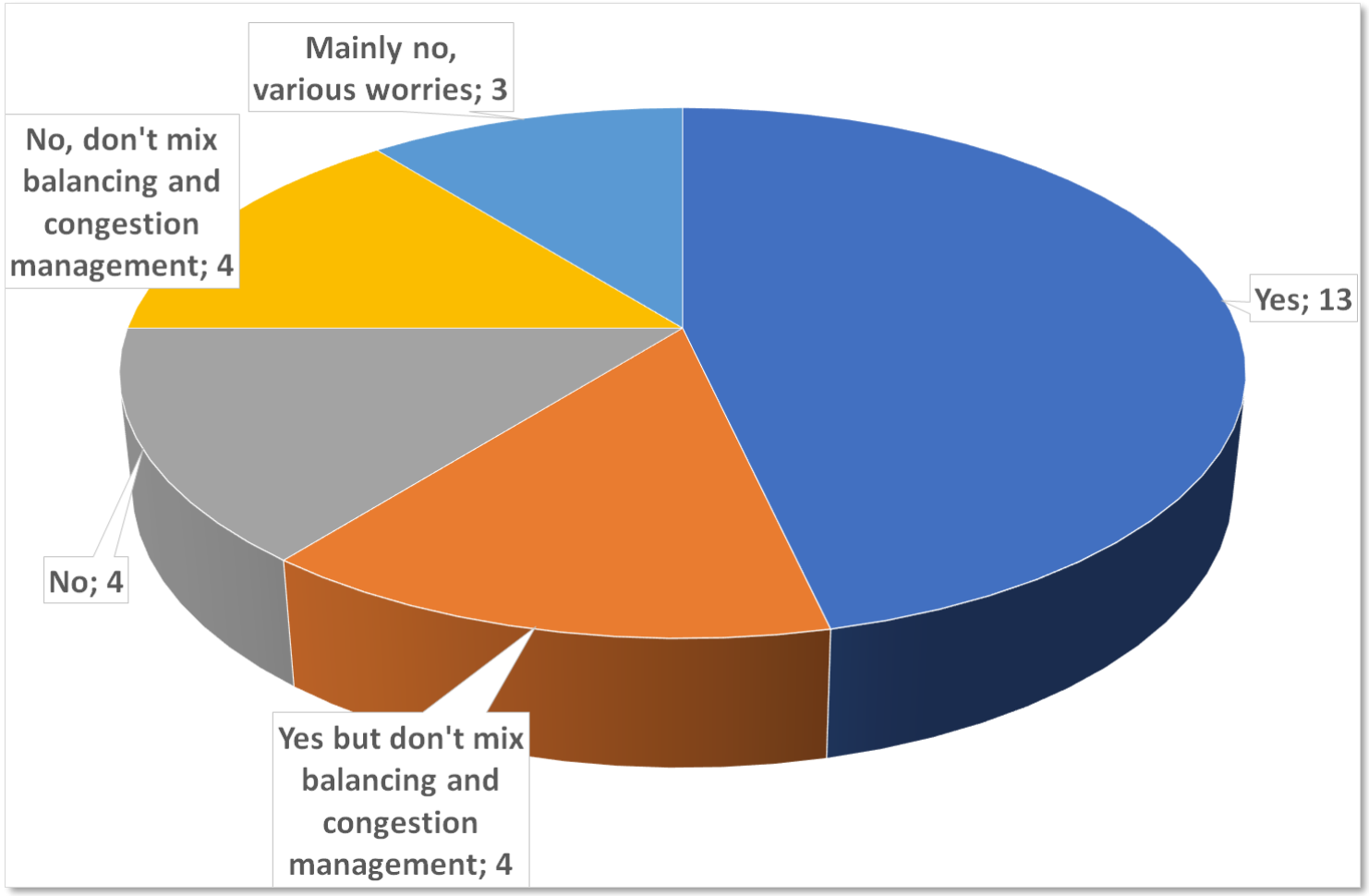


A number of respondents nevertheless sees **potential benefits of nodal models**



Balancing & Congestion Management

More locational information in the balancing timeframe: a solution worth further analysis? (Q. 44)



A **small majority** believes more locational information in balancing maybe worth further analysis

Main **Concerns/Reservations** mentioned:

- Don’t mix congestion mgmt & Balancing
- Structural congestions addressed via BZ definition

Main **Alternative** Mentioned (Q.38):

- Local Flexibility Markets

Local Flexibility Markets (Q. 45-47)

Efficient use of distributed flexibility

- Capacity based payments / tenders
- Bids for activation, closer to real time
- Pure flex markets (NODES, GOPACS, etc)

Recommendations

- TSO-DSO coordination
- Local flex products procured through markets
- Local markets with sufficient transparency
- Address market power

EU legislation

- Recommended: for products standardisation & integration with wholesale markets
- Achieve level playing field for participants & between markets in different countries
- Remember local specifities and constraints

Congestion Management & Spatial Granularity
Stakeholders Views

EFET

Lorenzo Biglia

ENSTO-E 2030 market design webinar – 10 June 2021

Congestion management and spatial granularity: How can we value flexible assets and services in a zonal model?

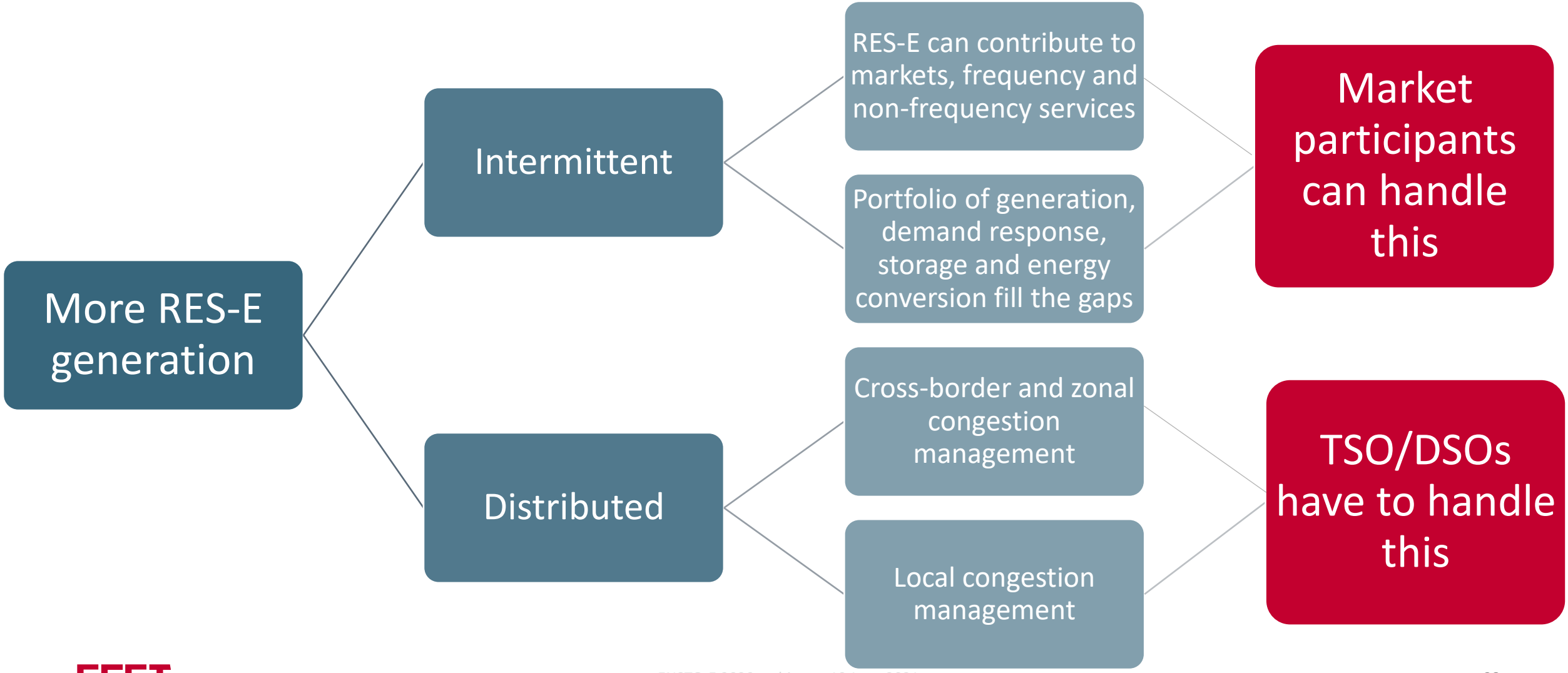
Lorenzo Biglia, EFET Electricity Committee Secretary

EFET

European Federation of Energy Traders

SO YOU CAN RELY ON THE MARKET

Why are spatial granularity and flexibility valuation linked?



Where can flexible assets and services be valued?

In the energy market

- Zonal market
- Bilateral trading between MPs
- MPs free to choose trading terms + standard products
- All technologies should have access to the market

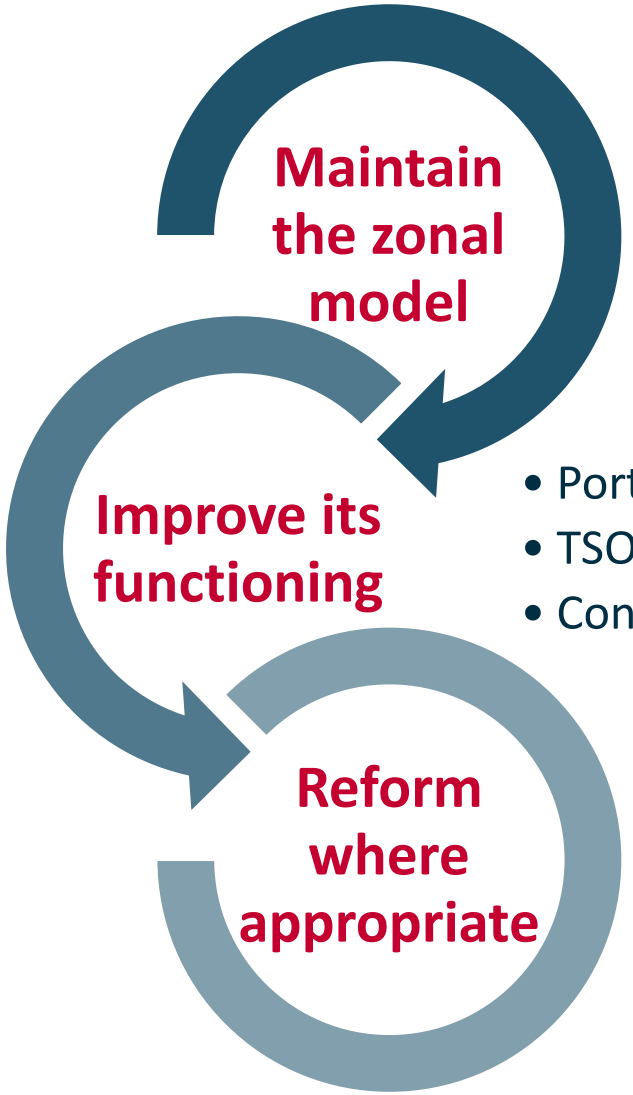
In balancing + non-frequency services

- Zonal procurement
- TSO as central counterparty
- TSOs to express a technical need at zonal level
- All technologies should be able to contribute

For congestion management

- Zonal or local procurement
- TSO or DSO as central counterparty
- SOs to express a a technical need at zonal or local level
- All technologies should be able to contribute

Suggestions for the way forward



- Zonal pricing is essential for energy markets and balancing
- Nodal is not desirable (nodal balancing would mean nodal market)
- All technologies should have equal rights, obligations, and opportunities to contribute

- Portfolio optimisation should be possible in all timeframes
- TSO balancing actions outside the operating window should cease
- Congestion management should not affect markets/balancing

Third Package not yet implemented

- Market effects of congestion management integrated into market coupling (PST, HDVC) needs further analysis
- Understand how local price signals (dispatch hubs) can influence zonal prices without affecting the playing field
- Coordinate research in one direction, in line with target model

EFET

secretariat@efet.org
www.efet.org

EFET

European Federation
of Energy Traders

SO YOU CAN RELY ON THE MARKET

Congestion Management & Spatial Granularity
Stakeholders Views

BMWi

Nils Saniter

Bundesministerium
für Wirtschaft
und Technologie

Congestion Management & Spatial Granularity
Stakeholders Views

Regulatory Assistance Project

Andreas Jahn

10. June 2021

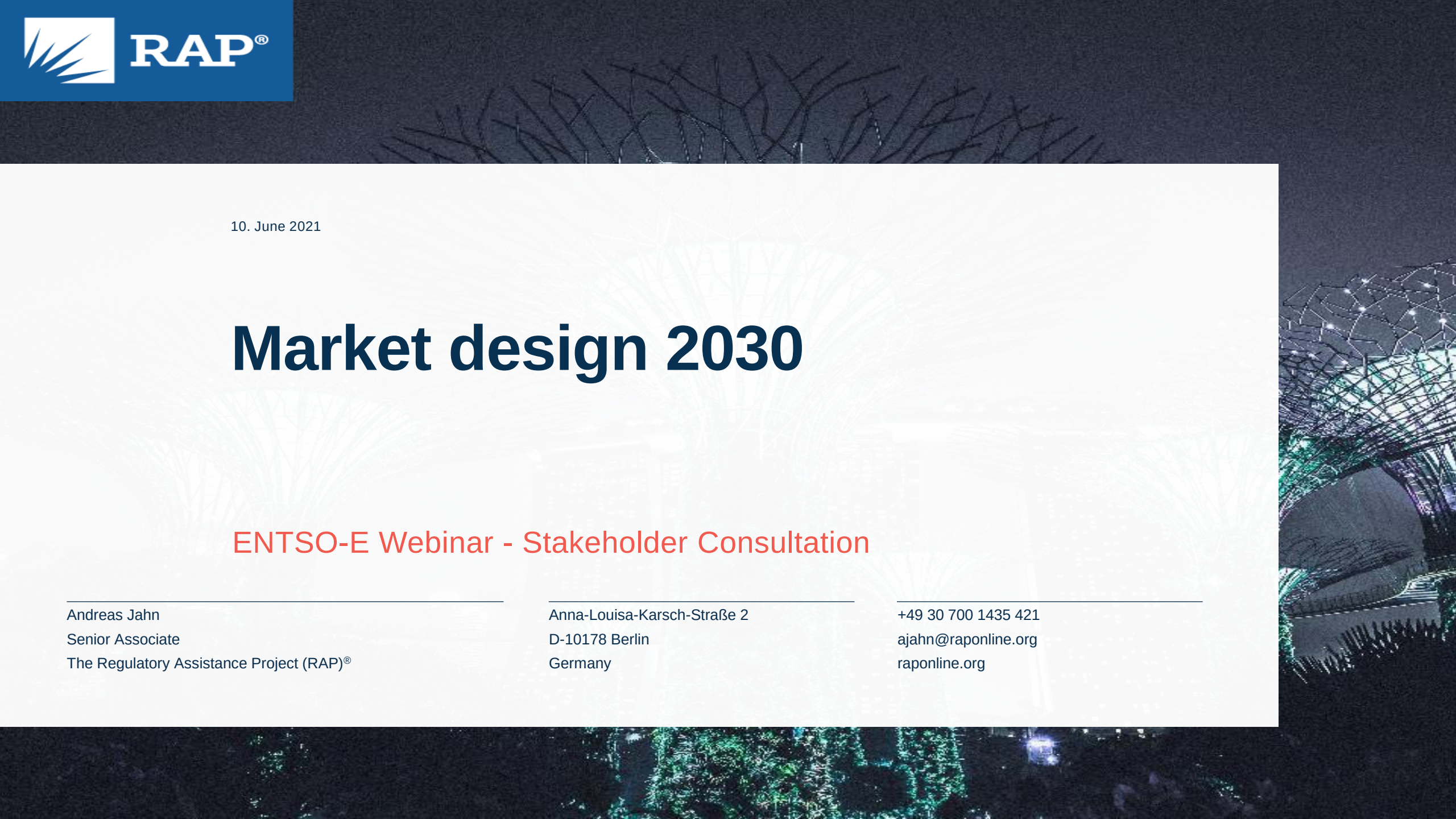
Market design 2030

ENTSO-E Webinar - Stakeholder Consultation

Andreas Jahn
Senior Associate
The Regulatory Assistance Project (RAP)®

Anna-Louisa-Karsch-Straße 2
D-10178 Berlin
Germany

+49 30 700 1435 421
ajahn@raponline.org
raponline.org



Locational marginal pricing, because

- Ongoing change in generation capacity (coal phase-out, new RES, increasing flexibility need)
- Transmission development will lag behind
- RES/supply centres mismatch with load centres
- vRES generation cause intrazonal congestion

If zonal bidding stops at national borders, European power market is calling for LMP/nodal pricing.

Flexibility markets

- Flexibility valued via competition in day-ahead, ID and balancing markets
- Network constraints are a local flexibility value
- Today, redispatch costs are socilised without any incentive for dispatch or investment

Market value of flexibility can only be achieved via top-down of consistant market design. Suboptimal bidding zones lead to incorrect flexibility values in every local flexibility market.

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

Andreas Jahn
Senior Associate
The Regulatory Assistance Project (RAP)®

Anna-Louisa-Karsch-Straße 2
D-10178 Berlin
Germany

+49 30 700 1435 421
ajahn@raponline.org
raponline.org

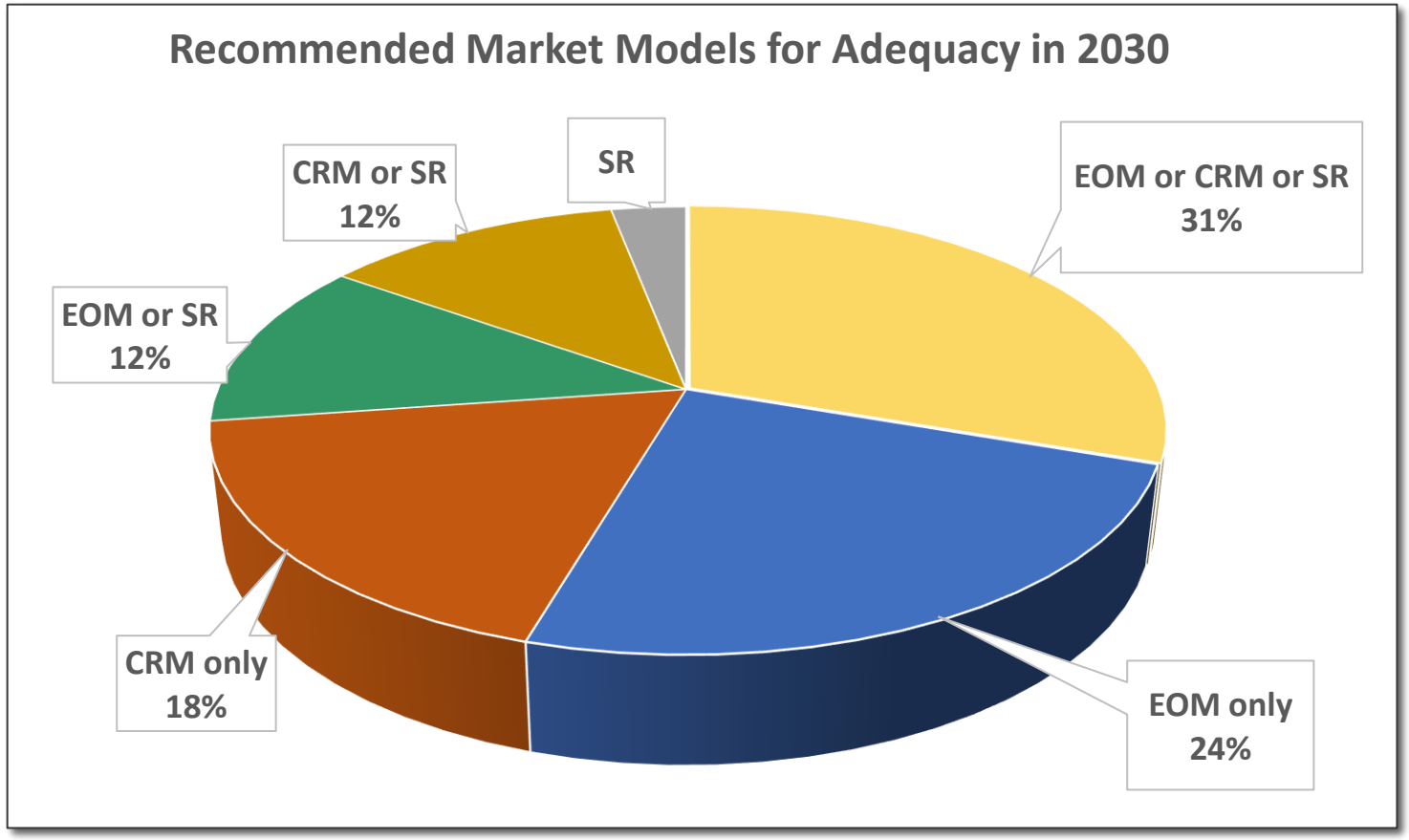
Adequacy and Investment Signals

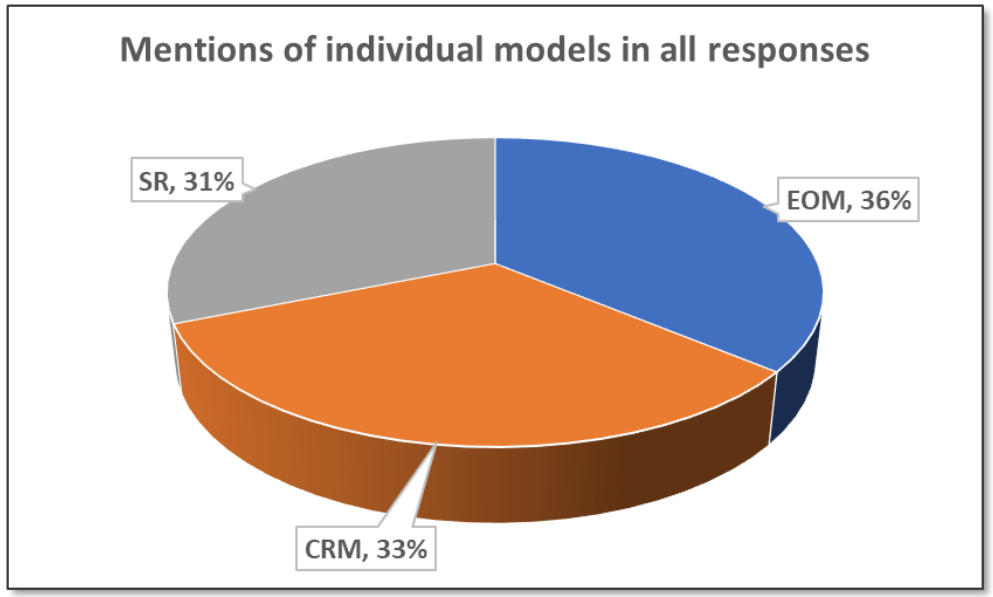
Adequacy & Investment Signals
Summary of consultation responses

Marco Foresti

ENTSO-E Market Design & Investment Framework Manager

Energy Only Markets, Capacity Remuneration Mechanisms or Strategic Reserves?





Stakeholder views on the 3 main market models (EOM, CRM, SR) are quite evenly split (Q.55 - 38 Responses)

As possible alternatives (Q.56 - 15 Responses)**, the most mentioned solution** (3 stakeholders) **was Long Term Contracts.**

Capacity Subscription Model

QUESTION 60
What are the main potential advantages and drawbacks of the capacity subscriptions model?

A small majority sees capacity subscription as a **promising option,** while requiring **considerable additional analysis** (Q.59). The **consumer-centric approach is the most mentioned advantage,** but there is **scepticism the model can improve investments signals. Complexity for consumers, acceptability** and belief that capacity needs should be determined by a 3rd party are other challenges

Scarcity Pricing: Benefits and Drawbacks

QUESTION 61
Which potential benefits or drawbacks do you foresee with the implementation of scarcity pricing in your market?

Scarcity pricing improves price signals for flexibility but is **not considered sufficient to stimulate generation investments** to ensure resource adequacy and can be hard to be politically accepted

RES Support Mechanisms: which are more fit for purpose for the 2030 power system? (Q.63)

While **2-sided CfDs are the preferred support mechanism,** there's an even wider call for progressively **phase out supports schemes and rely on a stronger ETS/carbon pricing**

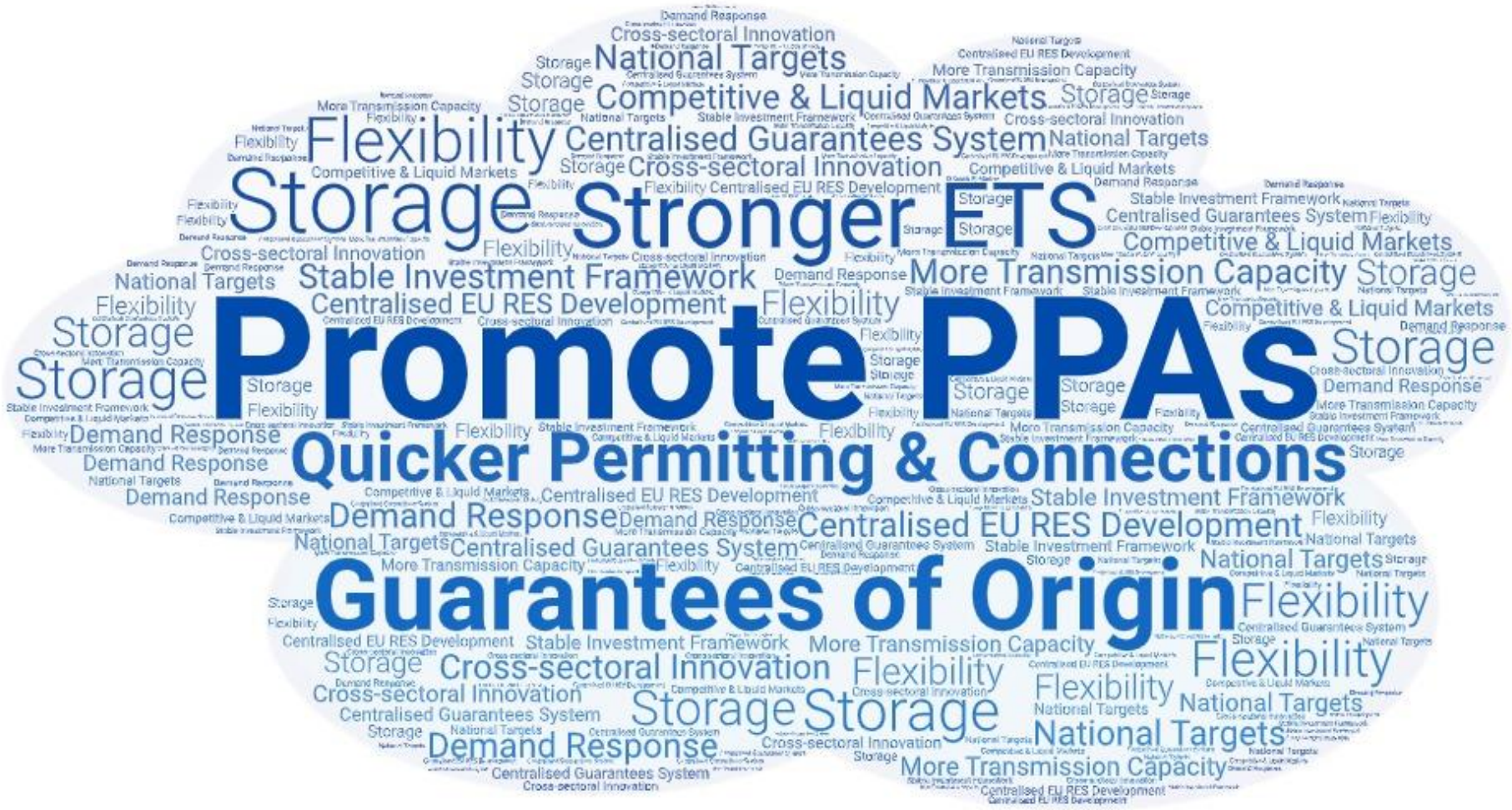
RES Support Mechanisms and participation to Balancing Markets

QUESTION 11
Which kind of support scheme has the least distortive effect on the participation of RES in balancing markets?

With regards to participation to balancing markets, **Investment Supports are considered the least distortive, followed by 2-Sided CfDs.** However, many stakeholders still **question the need of subsidies after 2030.**

Other market design elements to facilitate investments in RES

QUESTION 64
What other market design elements can facilitate investments in RES to achieve EU climate objectives?



The facilitation of **PPAs**, the promotion of **GOs**, **quicker permitting and connection procedures**, and the role of storage are complementary elements to facilitate investments in low carbon technologies

Other key market design areas necessary to achieve **2030 energy and climate goals**

QUESTION 71
Is there any other key market design area not addressed in this paper which deserves particular attention to achieve 2030 European energy climate goals?

The Investment Framework and Cross-Sector Integration are the most mentioned priority areas, followed by **Offshore and Storage.** Some stakeholders highlight the importance of the **consumer perspective, local flexibility markets and decentralisation. O**thers call for **TSOs to be more transparent, focus on implementation and increase transmission capacity** offered to the market.

Adequacy & Investment Signals
Stakeholders Views

Eurelectric

Yannick Phulpin

Adequacy & Investment Signals
Stakeholders Views

SolarPowerEurope

Andrea Villa

SolarPower Europe

SolarPower Europe

2030 Market Design Webinar

10th June 2021

Session 3: Adequacy & Investment Signals

Investment Signals

Predictability and **no retroactive changes** are fundamental elements of any future market design

Stable and predictable **carbon prices** are fundamental in order to decarbonize the whole European economy

A **mix of instruments** can be deployed:

1. **PPA** and **long-term price signals**
2. Tenders based on **2-way CfDs** or a mix of €/MW and €/MWh remunerations
3. **Improved support schemes:**
   - Support schemes promoting the production of renewable electricity during specific periods and/or with different production profiles
   - Defining a minimum capacity factor requirement in tenders to promote the optimisation of the grid by maximising the use of connection points (co-location / hybridisation)

Streamlined **permitting** processes

Session 3: Adequacy & Investment Signals

Adequacy

Capacity market shall be open to RES participation through:

- **Technology neutral auctions**
- **Adequate de-rating capacity**

RES are already able to provide balancing services but these skills are not correctly remunerated by the existing balancing services – which were designed for OPEX-based plants

Some good practices comprise:

- **Defining long-term contracts to provide balancing services** (as the DS3 Programme in Ireland or the UK design)
- **The provision of long-term balancing services could also be considered/contracted in RES tenders together with the RES capacity**

SolarPower Europe

Thanks for listening

Adequacy & Investment Signals
Stakeholders Views

TradeRES Project

Laurens De Vries

TradeRES

New Markets Design & Models for
100% Renewable Power Systems

TradeRES

New Markets Design & Models for
100% Renewable Power Systems

ENTSO-E Market Consultation

Contribution on behalf of the TradeRES project

by Laurens de Vries

10-6-2021

The research leading to these results has received funding from the European Union Seventh Framework Programme under the agreement Nr. 864276

TradeRES: who are we?

- Tools for the Design and modelling of new markets and negotiation mechanisms for a ~100% Renewable European Power System.
- H2020 project
- Goals:
  - Develop new electricity market designs
  - Model and simulate them
  - Open access
  - Involvement of key stakeholders in the research

System adequacy in a low-carbon system

- Electricity prices will increasingly be determined by:
  - the weather
  - the willingness to shift and the willingness to pay of demand.
  - energy storage.
- RES output and weather-driven electricity demand (heating, cooling) vary *year-on-year*.
- Short-term price volatility + long-term demand uncertainty → structurally higher investment risk, both for vRES and flexible resources.
  - Resources needed during extreme weather events may not be needed for a number of years on end.
  - vRES may not recover its cost either during 'good' weather years.

Long-term market design

- The energy-only market remains optimal in theory, but will market parties have enough information, be risk-neutral and avoid investment cycles?
- A capacity mechanism may be necessary, especially in the transition phase.
- Capacity subscription appears to provide the best incentives to prosumers, but needs to be tested. There are some open questions, e.g. regarding:
  - the remuneration of storage;
  - consumer behavior and acceptance;
  - increased simultaneity of demand when flexibility increases.

TradeRES analysis of market design

- TradeRES investigates the remuneration of different technologies in a low-carbon system.
  - Considering weather uncertainty, flexibility options, sector coupling etc.
- TradeRES models and simulates different market designs.
- The focus is on the optimal mix of variable renewables and flexible resources.
  - Energy-only market, scarcity pricing, capacity mechanisms…
  - RES tenders for CfD, feed-in-premium, taxes & levies…
- Innovative approach: coupling existing models in order to handle a large scope:
  - Wholesale, retail, consumer flexibility, sector coupling.

Improvements to zonal pricing

- The zonal market design is probably adequate until 2030.
- Zonal borders should be based on network congestion as much as possible.
- The proposed improvements to market coupling all are worth exploring, but will all lead to higher complexity and lower transparency.

Nodal pricing

- Is more efficient than zonal in terms of dispatch
- Requires fully independent system operator and political acceptance.
- Distributed nodal pricing is an option, but potentially very complex.
- Aggregation of flexibility per transmission node should be explored as an alternative.

Local flexibility

- Functions of local flexibility (demand response, storage):
  - minimize the cost of energy
  - energy balancing
  - distribution network congestion management
  - transmission network congestion management
- Utilizing local flexibility requires sufficient incentives
  - In retail tariff and network charges design (dynamic tariffs / real time pricing)
  - In wholesale markets (adequate products such as loop blocks)
- Local flexibility needs to have a level playing field with wholesale flexibility (generation, demand response, large-scale storage)
- The current stack of balancing mechanism, market coupling, intra-zonal redispatch + distribution network congestion management and flex markets is not efficient.

Conclusions

Key take-aways from today's debate

- General comments:
  - High participation in the consultation and the webinar (over 250 participants)!
  - The initial goal was to trigger a debate – this seems to be achieved.
  - The input from the stakeholders will allow TSOs to focus on the right topics in the future

- Session 1: Wholesale Markets
  - Open question on how the consultation responses will feedback to EC / ACER. How can such an exercise feed into future regulation. Concerns from stakeholders on the ID auctions reducing liquidity of continuous trading.
  - Overall it seems that there is consensus on the need for the implementation of the current model, but there is room for fine-tuning and removing barriers for RES and DSR.
  - Quite some barriers for RES and DSR which are due to local legislation (taxes / levies / grid charges) – both share the need for technology neutral products and processes. Specifically for DSR, there is a need for dynamic prices and tariffs.

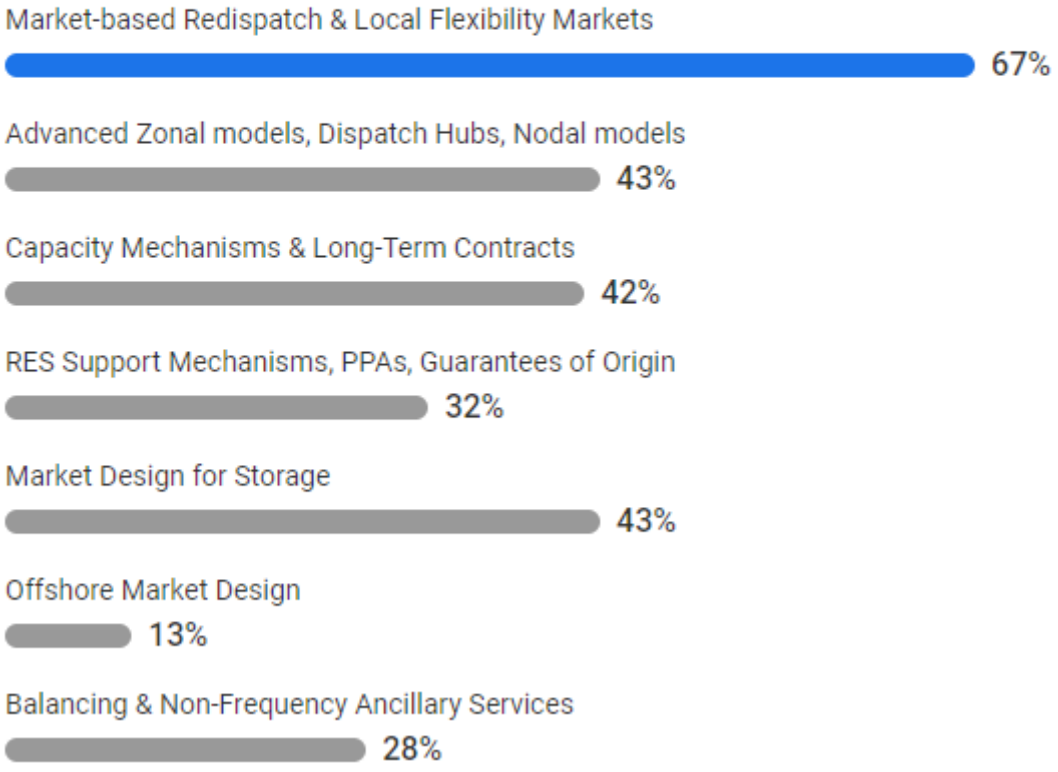
Key take-aways from today's debate

- Session 2: Congestion Management & Spatial Granularity
  - Most think the zonal model is the most suitable at least until 2030. Although nodal has some advantages, it is not realistic to move in this direction before 2030. There is a need to look beyond the theoretical models and also consider the cost of the change.
  - Questionable if redispatch markets are feasible, the mix of price signals will create inadvertent gaming options
  - Generally positive feedback about proposed improvements to the day-ahead market, further analysis needed. Mainly positive about looking at more locational information in the balancing time frame, but be careful about mixing balancing and congestion management
- Session 3: Adequacy & Investment Signals
  - Views are split among the preferred market model, but a majority of respondents believes energy only markets need to be complemented by strategic reserves or capacity mechanisms to reduce investment risks and costs.
  - Scarcity Pricing can be useful for flexibility but not enough to stimulate generation investments
  - 2-sided CfDs and Investments supports are considered the most effective and efficient, but as RES become competitive they will have to be replaced by carbon pricing complemented with PPAs and Gos
  - A stable investment framework with long term visibility of prices and revenues is essential for all technologies and investments, not only RES, but all type of generation, demand response, storage

Possible topics for follow-up webinar

Which of the following topics do you consider more interesting for a follow-up Market Design Webinar (3 choices max)?

0 6 0



Next steps

- **Follow-up Webinar** to be organized after the summer on
- ENTSO-E open to **bilateral discussions** with all stakeholders on all market design topics
- ENTSO-E to take into account stakeholder input and feedback received - both via public consultation and stakeholder webinar(s) - and publish a **Conclusion paper** on 2030 Market Design by end of 2021