



European Union Agency for the Cooperation
of Energy Regulators

ACER webinar on the results of the methodological study on barriers to competitive electricity markets

20 May 2021

9.00 – 10.30 CET

Online webinar

[Public information](#)

Opening

9:00 – 9:10

Cristina VAZQUEZ HERNANDEZ, Policy Officer – Electricity Department, ACER

Context

Agenda

Housekeeping rules

- The Clean Energy Package (Art.15 of Regulation (EU) 2019/942) requires ACER to monitor, among other topics, “*regulatory barriers for new market entrants and smaller actors*”, and “*state interventions preventing prices from reflecting actual scarcity*”.
- ACER aims to meet this requirement by measuring these barriers with different indicators and including the results in the Electricity Wholesale Volume of the [ACER’s annual Market Monitoring report](#).
- ACER commissioned a consultancy study during September 2020 – May 2021 aimed at identifying specific barriers, defining indicators and designing a methodology to create 2 composite indicators on (**efficient price formation and easy market entry and participation for new entrants and small actors**).
- DNV has conducted this methodological study with the involvement of NRAs and stakeholders.

AGENDA		
8.50 – 9.00	Dial-in time	Starts promptly at 9.00
9.00 – 9.10	Opening	Cristina VAZQUEZ HERNANDEZ, Policy Officer – Electricity Department, ACER
9.10 – 9:15	Project goals and approach <ul style="list-style-type: none"> Bart STOFFER, DNV 	
9.15 – 9:30	Main barriers to efficient price formation and easy market entry and participation for new entrants and small actors <ul style="list-style-type: none"> Jørgen BJØRNDALEN, DNV 	
9.30 – 9.40	Indicators developed to measure the barriers <ul style="list-style-type: none"> Jørgen BJØRNDALEN, DNV 	
9.40 – 9.55	Methodological approach in building the composite indicators <ul style="list-style-type: none"> Malte NUSSBERGER, DNV 	
9.55 – 10.00	Conclusions <ul style="list-style-type: none"> Bart STOFFER, DNV 	
10.00 - 10.25	Q&A (online submissions via chatbox)	Moderator: Thomas QUERRIOUX, Policy Officer – Electricity Department, ACER
10.25 - 10.30	Closing	Cristina VAZQUEZ HERNANDEZ, Policy Officer – Electricity Department, ACER

- Please be kindly reminded that your **mic is muted** throughout the webinar.
- You may pose questions via **chat during the presentation**; all attendees will view all the questions (and the eventual replies given via the chat).
 - At the end of the main sections we will address a few clarification questions, as time allows.
 - After the agenda-items we have a **Q&A session** (25 min) to go through the questions.
- The slide pack will be shared with you after the webinar via email and on the ACER website (including a recording of this webinar).

Project goals and approach

9:10 – 9:15

Bart STOFFER, DNV

Project goals

Tasks, alignment and interactions

Project goals

- Identify and define barriers to
 - efficient price formation
 - easy market entry and participation for new entrants and small actors
- Identify, select and define key qualitative and quantitative indicators to measure these barriers
- Identify the data sources and propose a data collection process to calculate the selected indicators
- Provide a methodology to combine the selected indicators and create two Composite Indicators (CIs) with a view to evaluate the performance of the Member States

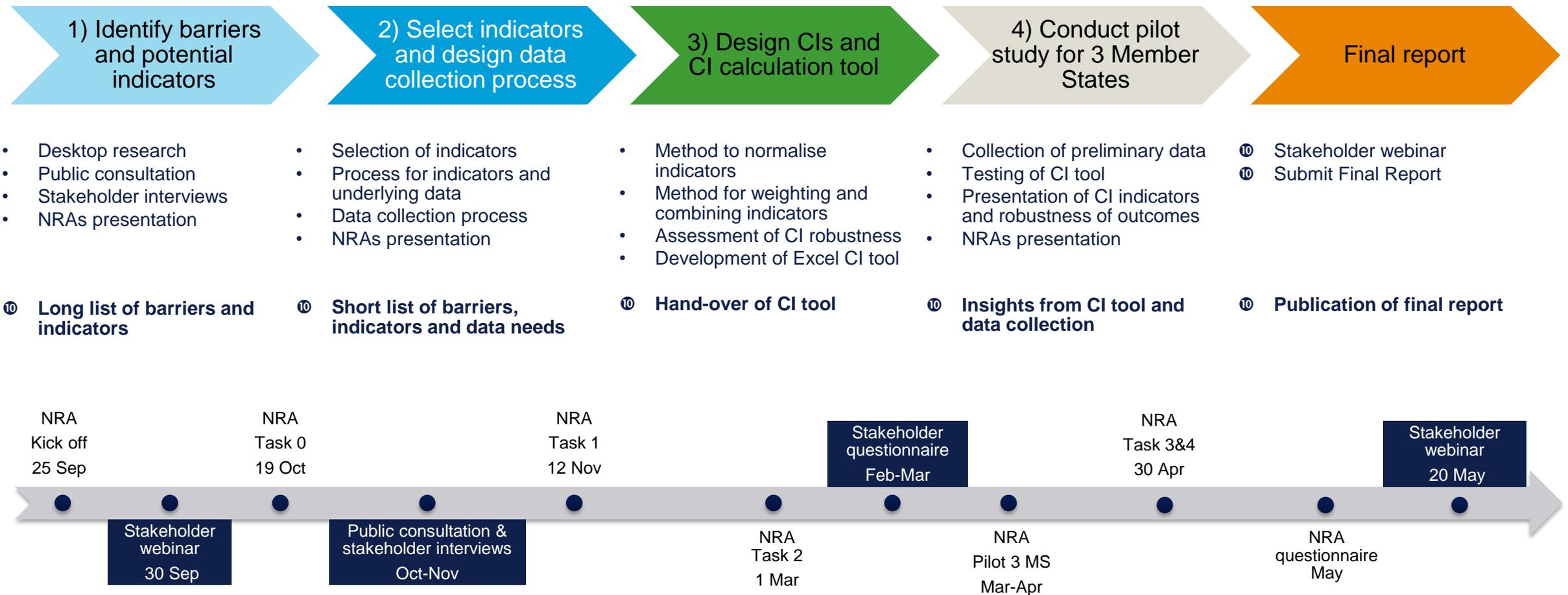


CI 1



CI 2

Project tasks, alignment and interactions



Main barriers to efficient price formation and easy market entry and participation for new entrants and small actors

9:15 – 9:30

Jørgen BJØRNDALLEN, DNV

Barriers

Categorisation

Weights

Basis for work – definitions and scope

Efficient Price Formation

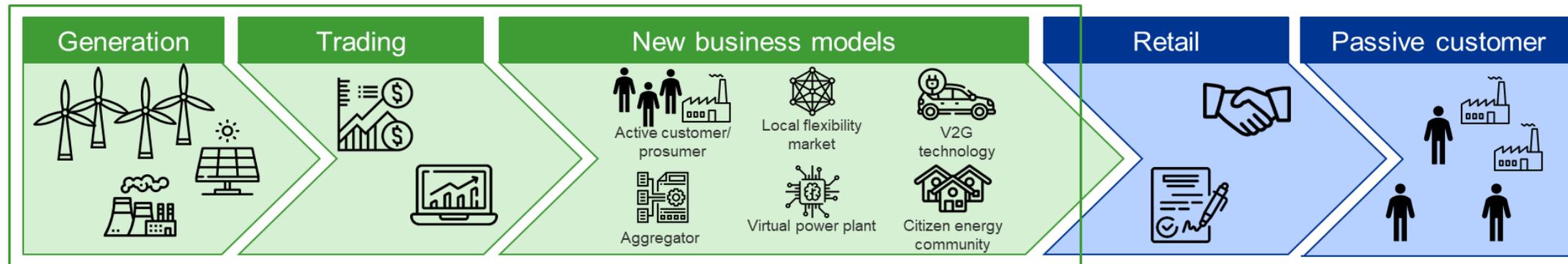
- All products
- All timeframes
- Cost-reflective
- Unrestricted
 - Integrity
- Transparency

To capture all aspects of efficient price formation

New entrants and small actors

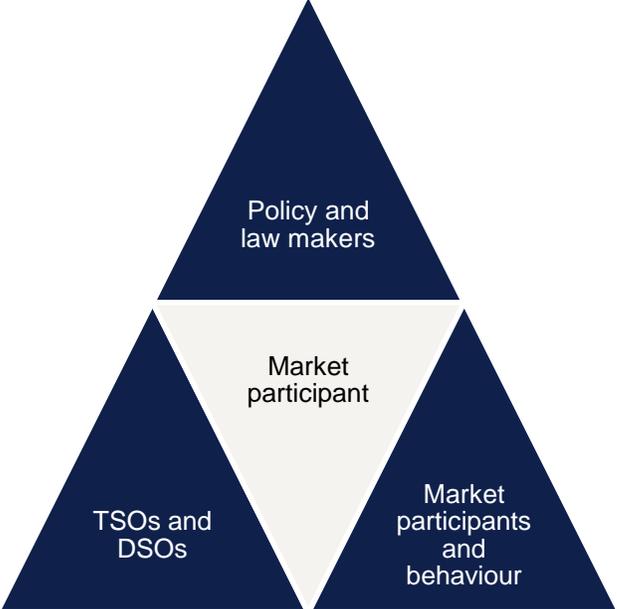
- From other markets
- Pursuing different business models
 - Leveraging market innovation
 - Focusing on new technologies
 - Just relative small
- Not spin-offs of existing participants

To capture challenges for new entrants or small actors



Barrier categories

Barriers related to policies, market design, regulations and laws at national and EU-level, focus on implementation



Barriers related to infrastructure, operation and access to the transmission and distribution network as well as provision of network services

Barriers related to market participants, e.g. maturity of markets, market concentration, number of incumbent generators, small markets, etc.

Barriers to efficient price formation

Regulation and market design

Relevance*	Weight	
	0.09	• Restrictive requirements in prequalification , product characteristics and other features of market design ***
	0.09	• Explicit price restrictions
	0.09	• Potential market distortions due to support schemes granted to different technologies or market participants
	0.04	• Potential market distortions due to capacity mechanisms
	0.04	• End-user price regulation **
	0.04	• Unavailability or little incentive to contract dynamic retail prices **

Market structure and performance

	0.15	• Insufficient competition and liquidity in wholesale markets
	0.08	• Scope for strengthening market integrity
	0.08	• Scope for increasing market transparency

Network services and operations

	0.11	• Failure to maximise availability of cross-zonal capacity
	0.11	• Delineation of bidding zones not reflecting structural congestions
	0.04	• Scope for improving transparency, cost-reflectivity and non-discrimination in the structure of network tariffs
	0.04	• Lack of transparency in information provided by System Operators (SOs) **

* Relevance based on stakeholder feedback from public consultation and interviews

** Same barrier name and same indicators for both composite indicators

*** Same barrier name but different indicators for each composite indicator

Efficient price formation – motivation (1/2)

Barrier	Motivation
Explicit price restrictions	Limitations on bids or prices limit price formation and may cause inefficient prices, depending on the type of limitation and how it is implemented in practice
Potential market distortions due to support schemes granted to different technologies or market participants	Support schemes may be justified, e.g., due to externalities or to meet policy targets, but poor design, e.g., no responsibility for imbalances, support motivating continued production despite negative prices, targeted use for some technologies, etc. can still be an undesirable barrier to efficient price formation. Under this barrier we also map the amount of support and share of capacity benefitting from various types of support
Potential market distortions due to capacity mechanisms	As set in Article 21 of Electricity Regulation (EU) 2019/943, Member States may introduce capacity mechanisms as a last resort to eliminate residual resource adequacy concerns. Even though capacity mechanism are a legitimate temporary measure, their design and implementation may influence efficient price formation. In particular, certain designs of capacity mechanisms can directly block price spikes in day-ahead markets, e.g. setting explicit or implicit caps for capacity providers. Some centralised capacity mechanisms can also lead to structural overcapacity.
Restrictive requirements in prequalification, product characteristics and other features of market design	Some restrictions are typically needed to cater for an efficient market, but too strong requirements or requirements that can only be met by some market participants may reduce the competitive and innovation pressure and as a consequence, the efficient price formation
End-user price regulation	If customers are not, or only to a limited extent, exposed to competition and thus indirectly to wholesale prices, the competitive pressure from the demand side of the market might be so weak that prices eventually are non-competitive/oligopolistic. There could potentially be quite different regulatory as well as technical (metering) reasons why customers are not exposed, or only weakly exposed to wholesale prices, and these barriers explore such causes
Unavailability or little incentive to contract dynamic retail prices	
Insufficient competition and liquidity in wholesale markets	Weak competition and lack of liquidity can be considered as two sides of the same coin; in any case the result is likely to be less efficient wholesale prices due to low competitive pressure, insufficient hedging opportunities and consequently less competition, and potentially unnecessary high costs for hedging of financial risks
Scope for strengthening market integrity	Efficient prices require competitive behaviour, which in turn depend on i.a. enforcement of behaviour rules in the market. It is therefore essential that price signals reflect a fair and competitive interplay between supply and demand, and that no profits can be drawn from market abuse, i.e. market manipulation, attempted market manipulation or insider trading.
Scope for increasing market transparency	Efficient prices also require that market participants have access to relevant market information in due course. Obstacles to distribution of such information will likely cause inefficient prices

Efficient price formation – motivation (2/2)

Barrier	Motivation
Failure to maximise availability of cross-zonal capacity	Network capacities are not automatically utilised in an optimal manner, and this may cause inefficient prices. This barrier addresses how successful the TSOs are in implementing current legislation
Delineation of bidding zones not reflecting structural congestions	The success of the European bidding zone method depends on the successful design of bidding zones and if the design incorporates the most important congestions. These indicators aims at measuring to what extent the actual design imposes costs in terms of redispatch, countertrade and loop flows
Scope for improving transparency, cost-reflectivity and non-discrimination in the structure of network tariffs	Network tariffs may represent a barrier to efficient price formation if/when they trigger an inefficient behaviour of some network users by giving misleading investment or dispatch signals to market actors. This could be due to lack of transparency and effective stakeholder involvement when setting the network methodology and tariffs, non-cost-reflective network tariffs and a different treatment of user groups with similar network use and network requirements, without a proper justification based on network costs.
Lack of transparency in information provided by SOs	Information about the state of the electricity system is particularly important for market actors to develop correct expectations, which in turn is key to ensure efficient prices

Barriers to new entrants and small actors

Regulation and market design

Relevance*	Weight	
	0.15	• Complex, lengthy and discriminatory administrative and financial requirements
	0.15	• Adequacy of the legal framework to enable new entrants and small actors
	0.15	• Restrictive requirements in prequalification , product characteristics and other features of market design ***
	0.06	• End-user price regulation **
	0.06	• Unavailability or little incentive to contract dynamic retail prices **
	0.06	• Restrictive requirements to participate in capacity mechanisms and interruptibility schemes

Market structure and performance

	0.18	• Insufficient competition in the retail market
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Network services and operations

	0.09	• Lack of incentives to consider non-wire alternatives
	0.09	• Lack of transparency in information provided by System Operators (SOs) **

* Relevance based on stakeholder feedback from public consultation and interviews

** Same barrier name and same indicators for both composite indicators

*** Same barrier name but different indicators for each composite indicator

New entrants and small actors – motivation

Barrier	Motivation
Complex, lengthy and discriminatory administrative and financial requirements	Administrative and financial requirements may be affordable for incumbents and large actors, but for new entrants and small actors they might represent insurmountable barriers for establishing new business and for innovation
Adequacy of the legal framework to enable new entrants and small actors	New entrants and small actors are dependent on an adequate legal framework, partly because their business models may rely on proper implementation of European legislation into national law, and partly because it might be costly to figure out how to otherwise set up new, innovative businesses
Restrictive requirements in prequalification, product characteristics and other features of market design	Balancing markets are mainly designed for large-scale generators with technical requirements and product characteristics that can exclude the smaller-scale/aggregated generation or demand-side bids from getting access and participate in these markets. Also exploring entry/exit
End-user price regulation	If customers are not, or only to a limited extent, exposed to competition and thus indirectly to wholesale prices, the market opportunities for new entrants and small actors are significantly smaller than otherwise.
Unavailability or little incentive to contract dynamic retail prices	There could potentially be quite different regulatory as well as technical (metering) reasons why customers are not exposed, or only weakly exposed to wholesale prices, and these barriers explore such causes
Restrictive requirements to participate in capacity mechanisms and interruptibility schemes	Capacity mechanisms may open important business opportunities for new entrants and small actors, unless the requirements to participate are set so as to prevent their participation
Insufficient competition in the retail market	New entrants and small actors are the group that is most dependent on well-functioning and effective competition; the lower the competitive pressure, the higher is the risk for the new entrants, as it suggests that incumbent can easily destroy the business model of the new entrants
Lack of incentives to consider non-wire alternatives	If alternatives to grid reinforcements are more beneficial for the society at large, but DSOs are not considering such options due to lack or inadequate incentives, this could be a barrier to new entrants and small actors.
Lack of transparency in information provided by SOs	Information about the state of the network is particularly important for new entrants and small actors, as their business models often rely on offering services to SOs with an ambition of contributing to solving their challenges. Sufficient information and transparency will be a significant enabling factor for these actors

Indicators developed to measure the barriers

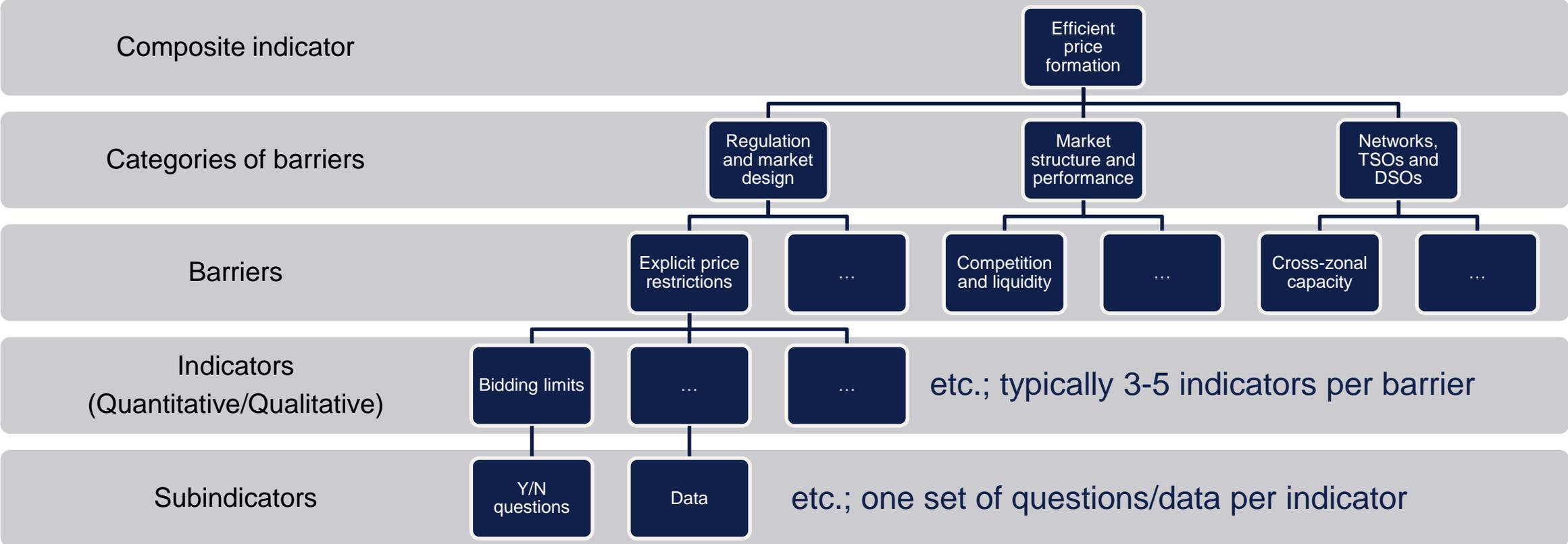
9:30 – 9:40

Jørgen BJØRNDALEN, DNV

Hierarchy

Examples

Hierarchy from CI to detailed questions



Example 1: Explicit price restrictions – *bidding and price limits*

Values of the effectively applied maximum price limits (compared to Value of Lost Load (VOLL)) and minimum price limits

The aim of this indicator is to map to what extent some countries have bid limits that deviate from the rest of the countries. The indicator consists of two sub-indicators: upper (cap) and lower (floor) limit. For clarity, information about technical limits is also collected.

The indicator is assessed at country level. For countries with more than one bidding zone, the average result for all bidding zones in the country will be considered as an estimation of the indicator.

There will be two scores per country for this indicator:

- 1) VOLL
- 2) Bid limits

Please provide the value of lost load that applies to the setting of technical limits pursuant to Article 10 of the Electricity Regulation in your territory.

Please provide, if applicable, the value of lost load in line with Article 11 of the Electricity Regulation.

If no limits, please provide the estimate of the value of lost load that is most commonly used for other purposes in your territory.

Please complete the table to the right, using values in EUR/MWh, based on the exchange rate for the last trading day of the year 2020, if applicable.

If no limit applies, please select NAP. NAP is already pre-filled for cases when limits are not expected.

Please select NA if a limit applies but is not known.

Please provide any maximum and minimum limits other than the harmonised technical limits that NEMOs may apply in accordance with Art 10.2 of the Electricity Regulation in rows B, C, D, E, F, and G.

Please enter the harmonised technical limits on maximum and minimum clearing prices that NEMOs may apply in accordance with Art 10.2 of the Electricity Regulation in rows A and H.

The indicator will be calculated using the narrowest set of limits.

- VOLL (value of lost load)
 - Relevant for ER 10, ER 11 or other purposes
- Upper and lower bidding and clearing price limits
 - Forward
 - Day-ahead
 - Intraday
 - Balancing energy prices
 - Imbalance prices
- The ratio will be calculated for the upper limits
- The indicator will be the narrowest set of limits if there is more than one set

EUR		Note: Countries with more than 1 bidding zone are kindly asked to leave these fields open and provide answer per bidding zone; please click here to find tables below					
EUR							
EUR							
EUR/MWh		Forward	Day-ahead	Intraday	Balancing energy prices	Imbalance prices	
A	Technical price caps (ER 10.2)	NAP				NAP	
B	Upper bid limit, buy bids					NAP	
C	Upper bid limit, sell asks					NAP	
D	Upper limit on market clearing or settled prices						
E	Lower bid limit, buy bids					NAP	
F	Lower bid limit, sell asks					NAP	
G	Lower limit on market clearing or settled prices						
H	Technical price floor (ER 10.2)	NAP				NAP	

Example 1: Explicit price restrictions – *bidding and price limits*

Values of the effectively applied maximum price limits (compared to Value of Lost Load (VOLL)) and minimum price limits

The aim of this indicator is to map to what extent some countries have bid limits that deviate from the rest of the countries. The indicator consists of two sub-indicators: upper (cap) and lower (floor) limit. For clarity, information about technical limits is also collected.

- C The maximum price limits will be compared to VOLL, pursuant to Article 10 or 11 of the Electricity Regulation, or alternatively, an estimate of the value of lost load that is most commonly used for other purposes. The indicator is assessed at country level. For countries with more than one bidding zone, the average result for all bidding zones in the country will be considered as an estimation of the indicator. There will be two scores per country for this indicator.

1) VOLL

1. Please provide the value of lost load that applies to the setting of technical limits pursuant to Article 10 of the Electricity Regulation, in your territory.
2. Please provide, if applicable, the value of lost load in line with Article 11 of the Electricity Regulation.
3. If no such VOLL exists, please provide the estimate of the value of lost load that is most commonly used for other purposes in your territory.

EUR
EUR
EUR

Note: Countries with more than 1 bidding zone are kindly asked to leave these fields open and provide answer per bidding zone; please click here to find tables below

2) Bidding and price limits

Please complete the table to the right, using values in EUR/MWh, based on the exchange rate for the last trading day of the year 2020, if applicable.

If no limit applies, please select NAP. NAP is already prefilled for cases when limits are not expected.

Please select NA if a limit applies but is not known.

Please provide any maximum and minimum limits other than the harmonised technical limits that NEMOs may apply in accordance with Art 10.1 of the Electricity Regulation in rows B, C, D, E, F, and G.

Please enter the harmonised technical limits on maximum and minimum clearing prices that NEMOs may apply in accordance with Art 10.2 of the Electricity Regulation in rows A and H.

The indicator will be calculated using the narrowest set of limits.

	EUR/MWh	Forward	Day-ahead	Intraday	Balancing energy prices	Imbalance prices
A	Technical price caps (ER 10.2)	NAP				NAP
B	Upper bid limit, buy bids					NAP
C	Upper bid limit, sell asks					NAP
D	Upper limit on market clearing or settled prices					
E	Lower bid limit, buy bids					NAP
F	Lower bid limit, sell asks					NAP
G	Lower limit on market clearing or settled prices					
H	Technical price floor (ER 10.2)	NAP				NAP

Example 2: Adequacy of the legal framework – *Complete definitions of roles and responsibilities*

The indicator depicts whether the new types of actors and their roles and responsibilities are clearly defined in the national regulatory framework. In cases of missing or insufficient definition of roles and responsibilities, the national legal framework is not complete and constitutes a (partial) barrier. Grey areas that may emerge from a lack of clear definitions are considered a barrier from the legal framework perspective, as they do not guarantee legality of the operation undertaken in the grey area. The scope is limited to important roles for new market entrants and small actors.

Please note that all questions here concern the national regulatory framework and how it regulates the following roles and responsibilities for different types of actors.

Regarding active customers

1) Is <i>active customer</i> defined in the national regulatory framework?	Yes
2) Please consider the definitions relevant for actives customers in national legislation. Are the following roles and responsibilities clearly defined in the national regulatory framework:	
a. Are they entitled to operate either directly or through aggregation?	Yes
b. Are they entitled to sell self-generated electricity?	No
c. Are they entitled to participate in flexibility schemes and energy efficiency schemes?	Please select:
d. Are they financially responsible for the imbalances they cause in the electricity system (as BRPs or delegating their balancing responsibility)?	Please select:
e. Are they protected from having to pay double charges, including network charges, for storage electricity?	Please select:

Regarding aggregators and independent aggregators

3) Is <i>aggregator</i> defined in the national regulatory framework?	Please select:
4) Please consider the definitions relevant for aggregators in national legislation. Are the following roles and responsibilities clearly defined in the national regulatory framework:	
a. Are customers free to contract with aggregators (including independent aggregators) without prior consent from their existing supplier?	Please select:
b. Are aggregators financially responsible for the imbalances they cause in the electricity system (as BRPs or delegating their balancing responsibility)?	Please select:
c. Is there a conflict resolution mechanism between market participants engaged in aggregation and other market participants?	Please select:
d. Is there a method for calculating financial compensation to suppliers or BRPs during activation of demand response?	Please select:
e. Are independent aggregators required to compensate the suppliers for energy not used as a consequence of providing explicit demand side response?	Please select:

Regarding citizen energy communities

5) Is <i>citizen energy community</i> defined in the national regulatory framework?	Please select:
6) Please consider the definitions relevant for citizen energy communities in national legislation. Are the following roles and responsibilities clearly defined in the national regulatory framework:	
a. Is participation in a citizen energy community open to all and voluntary?	Please select:
b. Are members or shareholders of a citizen energy community protected from losing their rights and obligations as household customers or active customers?	Please select:
c. Are citizen energy communities able to access all electricity markets, either directly or through aggregation?	Please select:
d. Are citizen energy communities financially responsible for the imbalances they cause in the electricity system?	Please select:
e. Are citizen energy communities entitled to arrange within the community the sharing of electricity that is produced by the production units owned by the community?	Please select:

Methodological approach in building the composite indicators

9:40 – 9:55

Malte NUßBERGER, DNV

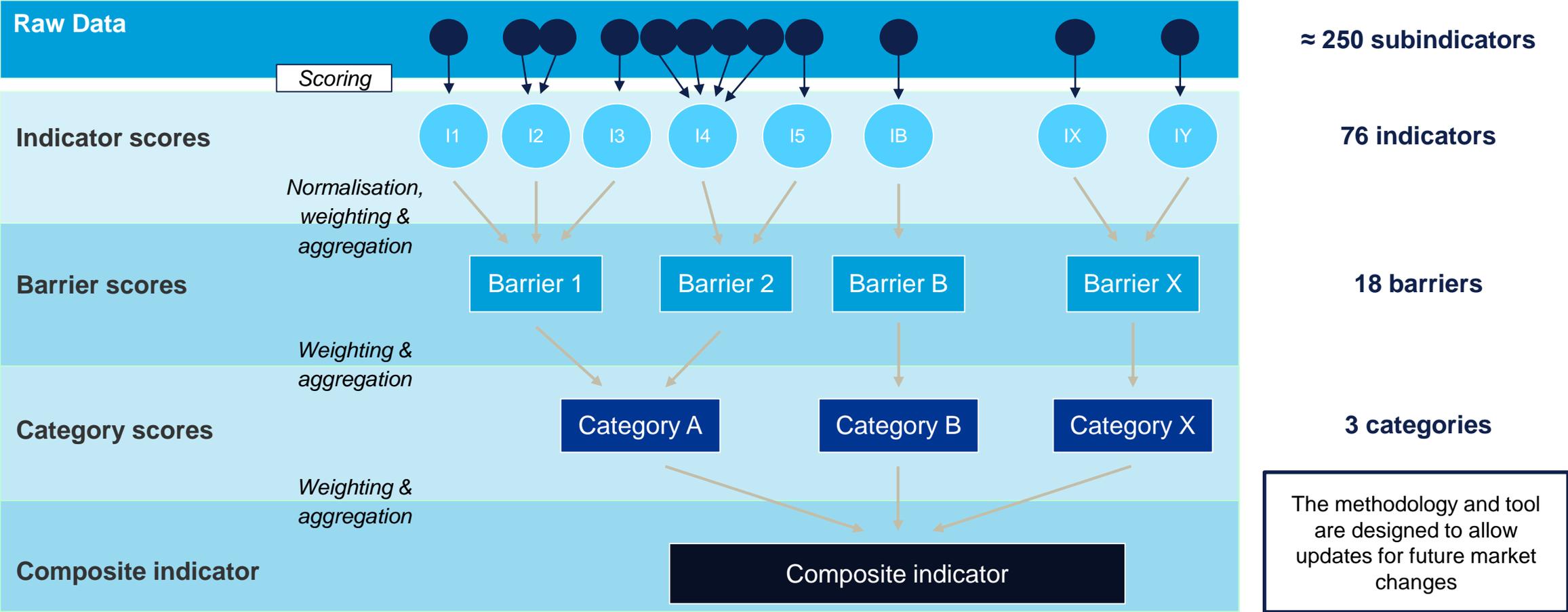
Methodology to derive composite indicators

Weighting

Potential inferences

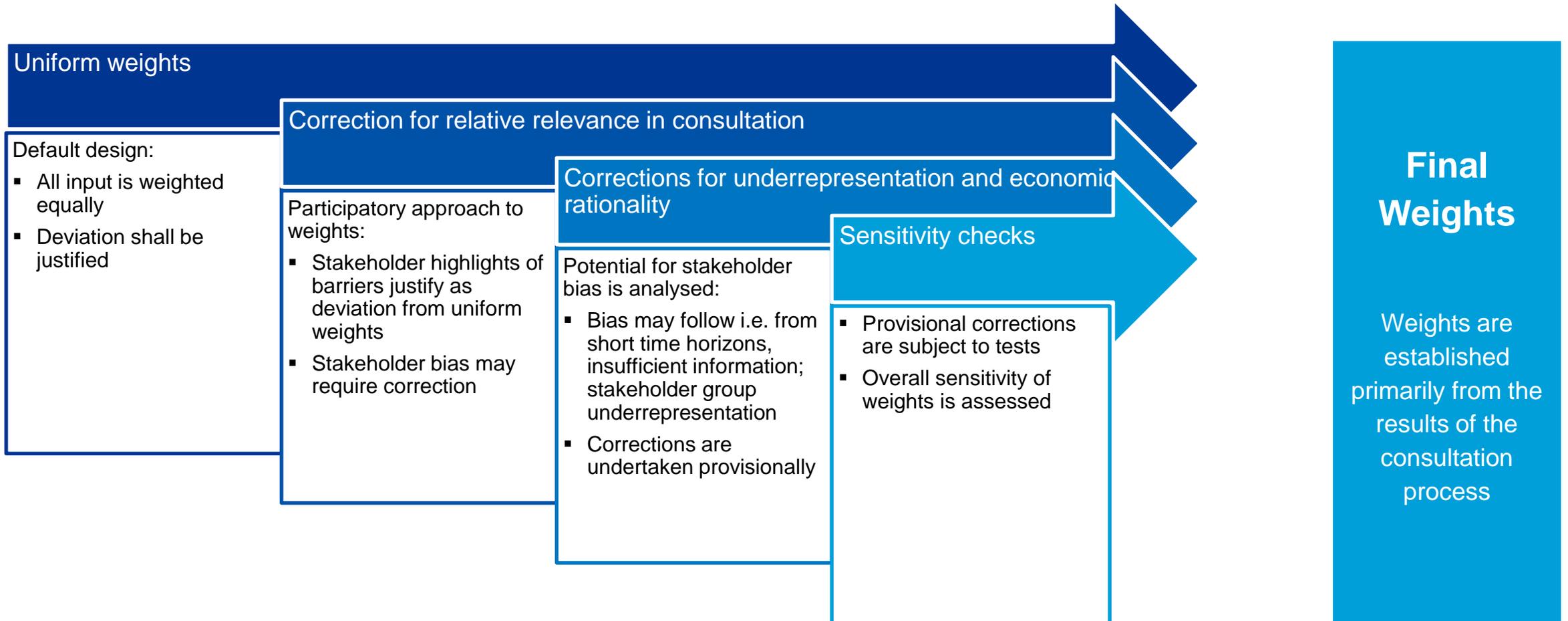
Methodology to derive the composite indicator

The Composite Indicator tool calculates the CI in several separately adjustable steps



Approach to weighing

Weighing allows to reflect the relative importance of specific indicators, barriers, and categories

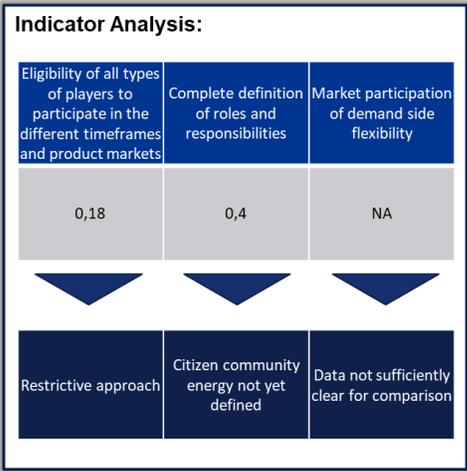


Overview of potential inferences

The composite indicator calculation offers various possibilities to derive insights from the data

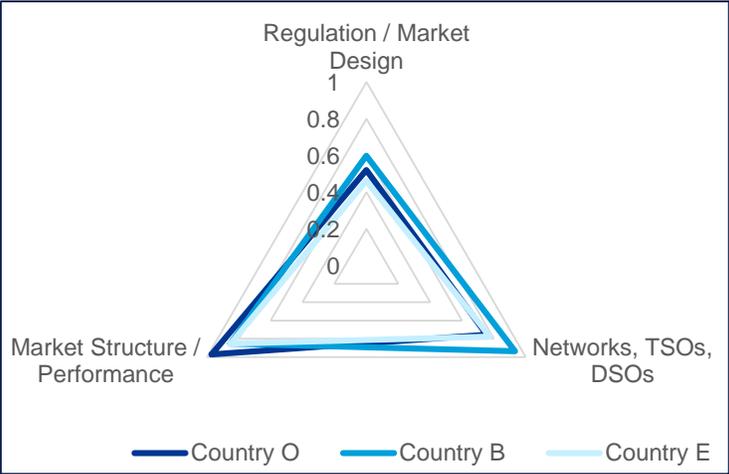
Stand-alone country analysis

- Review of the **reasons** for the barrier, category and CI score(s)
- Identify **prevalent barriers** and **low-hanging fruits** to improve market performance



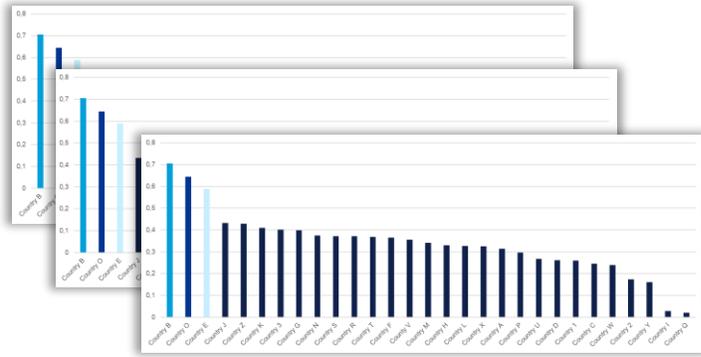
Cross-country comparison

- Identify **best practices**
- Identify **barriers common to most/all countries** and barriers that have been overcome across the board



CI score trend analysis*

- Assess **impact of policy change** on market performance
- **Monitor** prevalence of barriers
- **Compare own market performance development** with other countries



*analysis feasible once scores over multiple years are available

Conclusions

9:55 – 10:00

Bart STOFFER, DNV

Key insights

Key insights of the project

Methodology

- Identified barriers and indicators provide a **comprehensive basis** for determination of the composite indicators.
- Identified barriers and indicators are derived from stakeholder interviews, public consultation, NRA interactions, and desktop research.
- A total of 3 barrier categories, 16 barriers, and 46 indicators were used for the pilot study. 20 indicators are to be assessed in the future.
- **The barriers and indicators can be tailored as the market develops**, e.g. replace indicators if/when all countries perform equally, and add indicators as new barriers emerge.

Data

- **Data availability** for respective indicators, as based on data already held by ACER and data from the pilot study for 3 Member States, **is reasonably good**.
- **NRA data collection through the questionnaire works well** and delivers non-ambiguous input for the CI calculation tool.
- **Data from other sources** (ENTSO-E, CEER, etc.) **will be complementary** to data delivered by NRAs for initial assessments and calibrations.
- **Missing data remains an issue** but affected the results of the pilot Member States only to a limited degree. Different approaches are possible to mitigate for missing data.

CI Determination

- The CI calculation tool **delivers insights** into key CI contributors and into opportunities increasing the level of data completeness.
- The CI calculation tool includes methods to assess **robustness and sensitivities** of outcomes.
- The CI calculation tool can be used to **monitor the evolution of CI scores** over time, and consequently the improvements introduced by Member States in terms of efficient price formation and easy market entry & participation for new market entrants and smaller actors.

Q&A

10:00 – 10:25

Thomas QUERRIOUX, Policy Officer – Electricity Department, ACER



Provide your questions on the subject in the chatbox

We will group the questions and try to provide an answer

Closing

10:25 – 10:30

Cristina VAZQUEZ HERNANDEZ, Policy Officer – Electricity Department, ACER

If you have any further questions, please send an email to:

ewpmm@acer.europa.eu

- DNV will publish the methodological study by June.
- ACER will use this methodology to build the indicators and analyse the barriers across the EU Member States.
- ACER will progressively include the indicators in the Electricity Wholesale Volume of the [ACER's annual Market Monitoring report](#), starting with the 2020 MMR that will be published in Q4 2021.
- ACER will keep working to include new barriers and indicators in the analysis as the electricity markets evolve.

Backup

CI for efficient price formation (1/4)

Barrier	Indicator
Explicit price restrictions	Presence of price restrictions other than technical limits in line with Art 10.1 of the Regulation (EU) 2019/943
	Values of the effectively applied maximum price limits (compared to Value of Lost Load (VOLL)) and minimum price limits
	Number of hours when the maximum or minimum price limits are reached
	Application of automatic procedure if the price limits are reached
	Restrictions in the design of the imbalance settlement mechanism
Potential market distortions due to support schemes granted to different technologies or market participants	Presence of support schemes and share of total capacity benefiting from the support
	Total support per total MW installed or MWh generated
	RES schemes: Balance responsibility and incentives during negative prices or network congestions
Potential market distortions due to capacity mechanisms	To be defined in the future

CI for efficient price formation (2/4)

Barrier	Indicator
Insufficient competition and liquidity in wholesale markets	Share of energy production required to be sold at regulated prices or under some regulated mechanism aside the market
	CR3: market share (generation) of the 3 biggest business groups
	Number of generators (business groups) covering more than 5% of national generation
	Overall churn factor (all timeframes)
	Bid-ask spread of the most frequently traded forward products
	Correlation of DA and ID prices
	Open interest in forward products, relative to demand (load) (for the future)
	Number of active traders active in the wholesale market normalised with the demand in the country (for the future)
	Market share taken by TSOs in balancing energy and balancing capacity markets (per reserve type) (for the future)
	CR3 in the balancing capacity market or number of balancing service providers providing more than 5% of the total balancing capacity activated (for the future)
	CR3 in the balancing energy market or number of balancing service providers providing more than 5% of the total balancing energy activated (for the future)

CI for efficient price formation (3/4)

Barrier	Indicator
Scope for strengthening market integrity	Market surveillance at the NRA
	REMIT data sharing in place
	Public market abuse decisions
	Maximum possible financial penalty for market abuse
	Quality of Suspicious Transition Reports
	Compliance culture in trading firms (for the future)
	Quality of data provided under REMIT (for the future)
Scope for increasing market transparency	Overall transparency in the publication of data by the main NEMOs in a country (for the future)
	Share of market participants indicating in CEREMP (REMIT market participant registry) the inside information platform used to disclosure inside information
	Share of volume and share of transactions in organised markets

CI for efficient price formation (4/4)

Barrier	Indicator
Failure to maximise availability of cross-zonal capacity	Share of hours when the minimum 70% target is met
	Average relative margin available on network elements for which the relative margin is below 70%
	Frequency of the allocation constraints effectively limiting the offered cross-zonal capacity
Delineation of bidding zones not reflecting structural congestions	Redispatching and countertrading volumes to solve congestions which are not cross-border relevant
	Amount of loop flows on structurally congested network elements originated in a country
Scope for improving transparency, cost-reflectivity and non-discrimination in the structure of network tariffs	Transparency setting the tariffs methodology and the network tariffs
	Non-network related charges in network tariffs
	Cost-reflective and non-discriminatory network charges for generators
	Limited availability of time-differentiated network tariffs

CI for new entrants and small actors (1/4)

Barrier	Indicator
Complex, lengthy and discriminatory administrative and financial requirements	Collaterals required in different timeframes (for the future)
	High, complex and lengthy administrative procedures (for the future)
Adequacy of the legal framework to enable new entrants and small actors	Complete definition of roles and responsibilities
	Eligibility of all types of actors to participate in the different timeframes and product markets
	Market participation of demand side flexibility
	Best practices/limitations in the participation of flexible resources (for the future)
	Level of satisfaction of market actors with the definitions of their roles and responsibilities (for the future)

CI for new entrants and small actors (2/4)

Barrier	Indicator
Restrictive requirements to participate in capacity mechanisms	Mapping of capacity mechanisms
	Restrictions in the eligibility process hindering the participation of new entrants and small players
	Restrictions in the product design hindering the participation of new entrants and small players
	Restrictions in the allocation process hindering the participation of new entrants and small actors
	Participation of DSR, energy storage and intermittent and other non-hydro RES in capacity mechanisms
	Mapping of interruptibility schemes
	Interruptibility schemes: Restrictions in the eligibility process hindering the participation of new entrants and small actors
	Interruptibility schemes: Restrictions in the allocation process hindering the participation of new entrants and small actors
	Interruptibility schemes: Participation of aggregators

CI for new entrants and small actors (3/4)

Barrier	Indicator
Insufficient competition in the retail market	CR3: Market share of the 3 largest suppliers in the whole retail market by volume
	N° suppliers with market shares > 5% by volume (household and non-household)
	Annual entry/exit activity
	Correlation coefficient between the energy component of retail prices and wholesale prices for household consumers
Lack of incentives to consider non-wire alternatives	Presence of innovation incentives for Distribution System Operators (DSO)

Indicators used for both CIs (1/2)

Barrier	Indicator
End-user price regulation	Public interventions in the setting of retail prices
	Difference between average regulated and non-regulated retail prices over the year
Unavailability or little incentive to contract dynamic retail prices	Share of final household consumers with smart meters among total households (metering points)
	Share of energy component in the retail electricity prices
	Level of dispersion of the day-ahead wholesale prices
	Share of final household consumers equipped with smart meters without Energy Management Systems integrated with the telemetry software (for the future)
	Share of consumers equipped with smart meters receiving estimated bills (for the future)

Indicators used for both CIs (2/2)

Barrier	Indicator
Lack of transparency in information provided by SOs	Data completeness of the ENTSO-E TP
	Transparency of data provision to measure minimum 70% target
	Transparency of the capacity calculation methodology

These indicators are partially similar and partially different for the two CIs

Barrier	Indicator
Restrictive requirements in prequalification, product characteristics and other features of market design	Restrictions of products and other characteristics of the market design of balancing markets - for the Efficient Price Formation composite indicator
	Restrictions of products and other characteristics of the market design of balancing markets - for the New Entrant and Small Actors composite indicator
	Restrictions in the prequalification process to get access to balancing markets - for the New Entrants and Small Actor indicator
	Qualitative assessment of restrictions to entry or exit (to be applied for both composite indicators) (for the future)



European Union Agency for the Cooperation
of Energy Regulators

 info@acer.europa.eu
 acer.europa.eu

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