

The Network for Networks



**WG Regulation
18 December 2023**



Agenda



WG Regulation meeting

Date 18 December 2023
 Time 09:30 – 12:30
 Place Online – MS Teams

Agenda

I.	Welcome	<i>Per Everhill</i> WG Chairman
	09:30 – 09:35	
II.	Actions agreed (meeting 03 October 2023)	<i>Federica Bruni</i>
	09:35 – 09:40	
III.	Policy Updates:	<i>Federica Bruni</i> <i>Carmen Gimeno</i>
	09:40 – 10:15	<ul style="list-style-type: none"> • EC Action Plan on Grids • Electricity Market Design
IV.	Flexible Connection Agreements Presentation of CEER paper on Alternative Connection Agreements	<i>Judit Krajcs,</i> <i>International Coordinator and</i> <i>Expert for Electricity, MEKH, CEER</i>
	10:15 – 10:50	Q&A
V.	Coffee Break	
	10:50 – 11:00	
	Revenue Regulation	
VI.	<ul style="list-style-type: none"> • Revenue regulation framework in Norway • Anticipatory investments • GEODE Position Revenue Regulation - Discussion 	<i>Lisbeth Vingas</i> <i>Elvia, NO</i> <i>James Pleass</i> <i>ENA, UK</i> <i>Per Everhill</i> WG Chairman
	11:00 – 12:15	
VII.	Discussion GEODE Messages on Energy Sharing – preliminary discussion	<i>Carmen Gimeno</i>
	12:15 – 12:25	
VIII.	AOB & next meeting	
	12:25 - 12:30	

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I. Welcome



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II. Previous actions agreed 03 October 2023



WG Regulation – Actions



Subject	Action
<p>Policy Updates</p>	<ul style="list-style-type: none">• Keep sharing updates on the main policy developments ✓

WG Regulation – Actions



Subject	Action
<p>WG Topics – Revenue Regulation</p>	<ul style="list-style-type: none">• Drafting a GEODE position paper with input from different countries• Sharing with the WG members more information on Austrian WACC ✓• Sharing of CEER paper on Alternative Connection Agreement ✓• Presentation on anticipatory investments schemes (e.g. UK) and experience for the next meeting ✓• Lisbeth Vingas will present the revenue regulation scheme in Norway ✓

Advice from GEODE's Board



Subject	Action
<p data-bbox="346 839 810 943">WG Topics – Energy Sharing</p>	<ul data-bbox="996 851 2038 1008" style="list-style-type: none"><li data-bbox="996 851 2038 1008">• GEODE key messages on energy sharing to be developed ideally with an editorial team with experts from WG Innovation & WG Regulation.

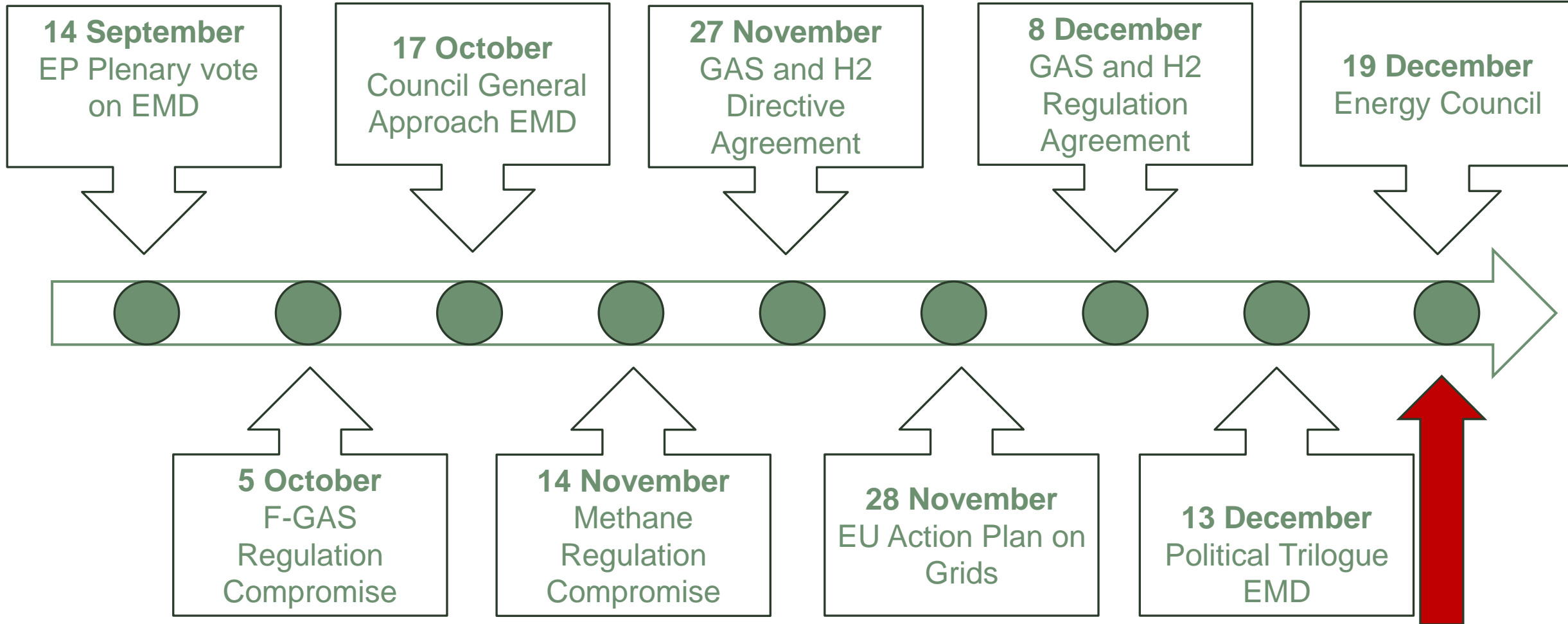
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III. Policy Updates



Policy Timeline



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European Commission Action Plan on Grids



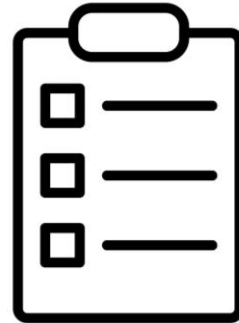
Action Plan on Grids – 29 November



7 Challenges



14 Actions



Pact for Engagement



7 Challenges

1) Accelerating implementation of existing PCIs and developing new projects

2) Enhancing long-term network planning

3) Introducing a supportive, future-proof regulatory framework

4) Making better use of existing grids and smartening them

5) Improving access to financing

6) Ensuring faster and leaner permitting processes

7) Strengthening supply chains

Key Actions for DSOs – Action 3



Action 3

EU DSO Entity to support DSO grid planning by mapping the existence and characteristics of distribution development plans.

- The EU DSO Entity should, by mid-2024, explore **case studies and best practices and publish recommendations to improve distribution network planning** in close coordination with ENTSO-E and TSOs.
- **Transparent and regular exchanges** with stakeholders from renewable, electromobility, heating and cooling, consumer and civil society regional representatives in the preparation of distribution NDPs will be essential.
- **Adequate data sharing** will also support DSOs in the **planning of network needs** to shorten grid connection times.
- NRAs, in cooperation with ACER and CEER, should, by Q4 2024, **provide guidance to DSOs on planning and promote consistency among plans.**
- The **Commission**, with the **EU DSO Entity**, will also reinforce from 2024 **their support to the design and submission of PCI applications for smart grid projects.**

Key Actions for DSOs – Action 4



Action 4

Commission to propose guiding principles identifying conditions under which anticipatory investments in grid projects should be granted.

- The **Commission**, with support from **ACER, ENTSO-E and EU DSO Entity**, will by **Q1-2025** propose **guidance identifying conditions under which the approval of anticipatory investments should normally be expected.**
- The EC calls on the use of **anticipatory investments** for investing in future-proof offshore networks that allow for future expansions of meshed offshore grids; for areas with high untapped onshore PV potential such as renewable acceleration areas set in accordance with RED.

Key Actions for DSOs – Action 6



Action 6

ENTSO-E and EU DSO Entity to agree on harmonized definitions for available grid hosting capacity for system operators and to establish a pan-EU overview.

- By mid-2025, ENTSO-E and the EU DSO Entity should establish a **pan-EU overview** of available grid hosting capacities that should give **visibility to project developers** when conceptualizing their projects.
- ENTSO-E and the EU DSO Entity should support system operators in **digitalizing and streamlining procedures for grid connection request by providing guidelines and recommendations for System operators by mid- 2025.**
- The aim is to further support NRAs in understanding where in the network flexible (non-firm) connections could be beneficial to the system.
- This should be accompanied by the implementation by the NRAs of a clear framework to disincentivize the application for connection requests who are not substantiated by solid project or committed by a developer.

Key Actions for DSOs – Action 7



Action 7

ENTSO-E and EU DSO Entity to promote uptake of smart grid, network efficiency and innovative technologies.

In order to ensure that readily available technologies are implemented to improve the functioning of the grid infrastructure, an increased visibility for technological aspects should be implemented. For this reason, the EC calls on:

- **ENTSO-E and EU DSO Entity to jointly update the Technopedia by end 2024**, providing clarity to the innovative technologies being used in pilot projects across Europe for smart grids and network efficiency. The Technopedia should also include technologies developed under Horizon Europe and Horizon 2020 providing examples of use cases and benefits.
- The Technopedia updates to be shared during future Smart Electricity Grid Summits organized by Commission and EU DSO Entity.

Key Actions for DSOs – Action 8



Action 8

ACER, in its next tariff report, to recommend best practices in relation to the promotion of smart grids and network efficiency technologies through tariff design, focusing on the consideration of OPEX in addition to CAPEX and benefit sharing.

- **Network Tariffs and their methodologies, should be regularly updated by NRAs, based on both OPEX and CAPEX so to consider the changing energy system, and updated role of DSOs.**
- It also calls on **ACER** to further support NRAs through **recommending best practices in the next tariff report due January 2025**, and support NRAs in their implementation.
- **Network tariffs therefore need to evolve with the energy system.**

Key Actions for DSOs – Action 9



Action 9

Commission to identify tailored financing models and strengthen dialogue to address obstacles to private financing.

- **The Commission will launch by the end of 2023 a reinforced process** with investors, credit agencies, financial institutions, regulatory authorities and system operators **to identify and address obstacles to financing** including through loans, equity and guarantees.
- **EC and EIB to explore grids financing needs within the context of Invest EU.**
- The Commission will ensure the coordination and synergies between this work and relevant work on access to finance as set out in the Wind Power Action Plan.

Key Actions for DSOs – Action 10



Action 10

Commission to increase visibility on opportunities from EU funding programmes for smart grids and modernisation of distribution grids.

- The Commission will **kick-start from Q1 2024 a process to work with Member States on funding opportunities for distribution grids, including via a dedicated high-level meeting.**
- The Commission will also put forward dedicated technical assistance within the Technical Support Instrument to help enterprises preparing their funding applications and will collaborate with the EU DSO Entity to raise awareness on this action among its DSO members.
- **The EC calls on MS who are in high need for DSO grids modernization to make use of eligible funding opportunities** such as the ERDF , Cohesion Funds, Recovery and Resilience Facility, including its REPowerEU component.

Key Actions for DSOs – Action 11



Action 11

Commission to support permitting acceleration providing guidance and technical support on how to implement existing legislative tools and Member States to implement acceleration measures.

- Member States are strongly encouraged to make use of the **voluntary provisions** under the emergency Council Regulation (Article 6) and **rapidly transpose the revised Renewable Energy Directive (RED)** in view of accelerating the development of transmission and distribution grid networks necessary to integrate renewables into the system.
- The Platform of the National Competent Authorities will organize a **ministerial meeting to ensure political steer to address identified permitting issues.**
- The Commission will conduct a **study in 2024 assessing the implementation of the permitting provisions of TEN-E Regulation** to identify best practices and specific measures to be taken by Member States to accelerate permitting.
- At the latest by mid-2025, the Commission will provide guidance on the designation of dedicated infrastructure areas for grid projects necessary to integrate renewables.
- The Commission will also update by Q4 2024 the guidance on streamlining environmental impact assessments for PCIs and PMIs and the guidance on energy transmission infrastructure and EU nature legislation.
- From 2024 the Commission will support the **digitalisation of permitting procedures** for grid projects through the Technical Support Instrument (TSI).

Key Actions for DSOs – Action 12



Action 12

Commission to launch a Pact for Engagement for early, regular and meaningful stakeholder engagement and regulatory support.

- The Commission will launch, with the occasion of the 2023 edition of the PCI Energy Days, **a Pact for Engagement with Member States, NRAs, system operators and civil society** for early, regular and meaningful stakeholder engagement and the need for adequate regulatory support.

Key Actions for DSOs – Action 13



Action 13

ENTSO-E and EU DSO Entity to collaborate with technology providers to develop standard technology specifications and improve visibility of grid project pipelines, to facilitate investments in manufacturing capacity and supply chains.

- **ENTSO-E should** establish an ambitious dialogue between TSOs and manufacturers for **aligning product specifications that should be agreed by end-2024**. Once agreed, TSOs should use such harmonized specifications in their own procurements and regulatory authorities should encourage them in tariff designs.
- As part of the established High-Level Forum on European Standardisation, a **special working group on green electricity system** will identify standardisation gaps and propose a roadmap by Q1 2024 for the development of standards required across the sector.
- **ENTSO-E and the EU DSO Entity should, together with grid operators,** establish by Q4 2024 mechanisms for **providing increased visibility to manufacturers into their upcoming procurement plans for equipment and systems** on all voltage levels.

Key Actions for DSOs – Action 14



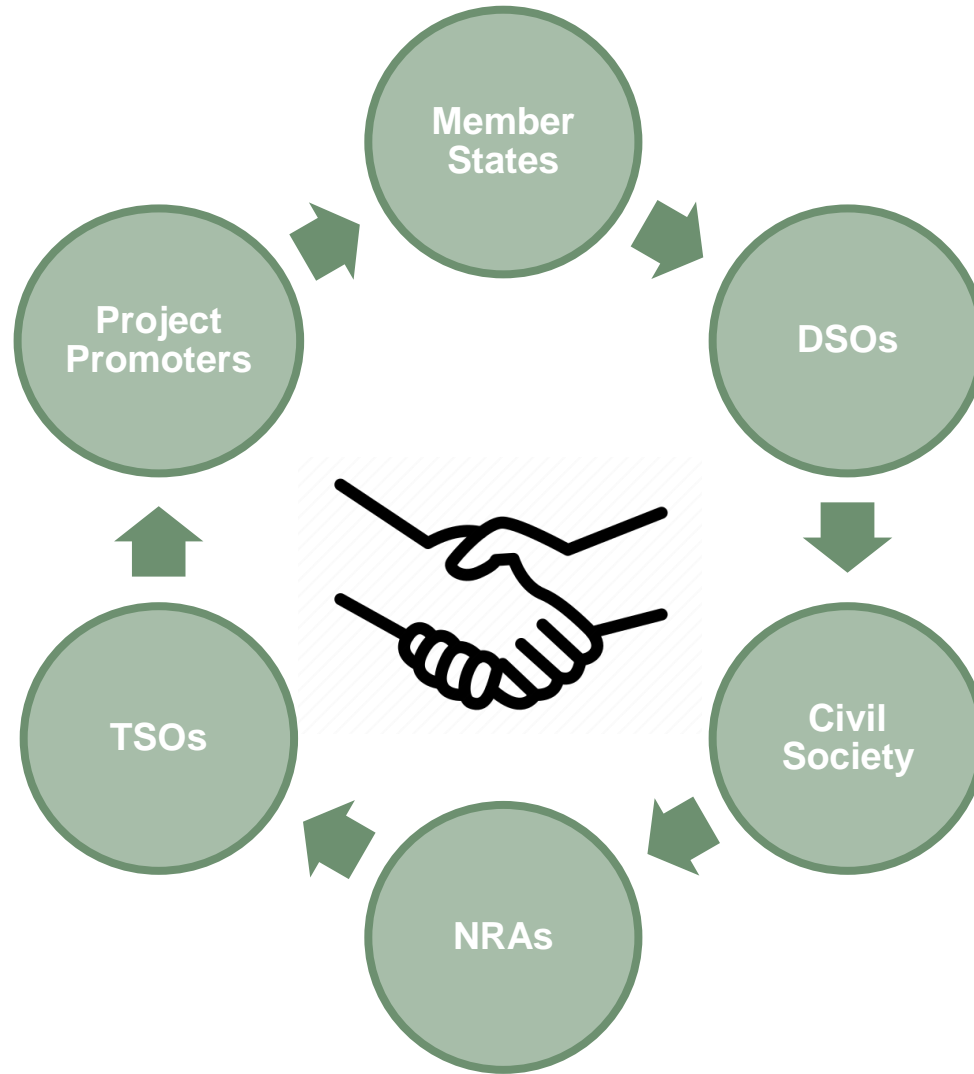
Action 14

Commission to promote common technical requirements for generation and demand connection

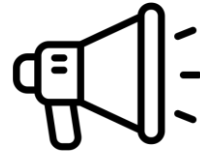
- The Commission will assess and propose measures to **promote common technical requirements in revisions of the network codes** on requirements for generators and demand connection code by 2025.

CATEGORY	ACTIONS	TIMELINE
Accelerating the implementation of PCIs and developing new projects	1. Commission, Member States and TSOs to strengthen support to PCI and PMI preparation, faster implementation and funding	From 2024
Improving long-term grid planning for a higher share of renewables and increased electrification	2. ENTSO-E to enhance top-down planning towards 2050 by integrating the identification of offshore and onshore system needs and further considering hydrogen	From Q1 2024
	3. EU DSO Entity to support DSO grid planning by mapping the existence and characteristics of distribution development plans	Mid-2024
Introducing regulatory incentives for forward-looking grid build-out	4. Commission to propose guiding principles identifying conditions under which anticipatory investments in grid projects should be granted	Q1 2025
	5. Commission to issue guidance on cross-border cost sharing for offshore projects	Mid-2024
Incentivising a better usage of the grids	6. ENTSO-E and EU DSO Entity to agree on harmonised definitions for available grid hosting capacity for system operators and establish a pan-EU overview	From adoption
	7. ENTSO-E and EU DSO Entity to promote uptake of smart grid, network efficiency and innovative technologies	Q4 2024
	8. ACER, in its next tariff report, to recommend best practices in relation to the promotion of smart grids and network efficiency technologies through tariff design, focusing on consideration of OPEX in addition to CAPEX and benefit sharing	Q1 2025
Improving access to finance	9. Commission to identify tailored financing models and strengthen dialogue to address financing obstacles	From adoption
	10. Commission to increase visibility on opportunities for EU funding programmes for smart grids and modernisation of distribution grids	From Q1 2024
Accelerating deployment through faster permitting and public engagement	11. Commission to support permitting acceleration providing guidance and technical support on how to implement existing legislative tools and Member States to implement acceleration measures	2024-25
	12. Commission to launch a Pact for Engagement for early, regular and meaningful stakeholder engagement and regulatory support	From adoption
Strengthening grid supply chains	13. ENTSO-E and EU DSO Entity to collaborate with technology providers to develop standard technology specifications and improve visibility of grid project pipelines, to facilitate investments in manufacturing capacity and supply chains	Q4 2024
	14. Commission to promote common technical requirements for generation and demand connection	By 2025

Pact for Engagement



Pact for Engagement – 4 pillars



Promoting and communicating the **Distribution Grids key role** as enablers of the energy transition.



Fostering cooperation between national & regional authorities in ensuring implementation of **permitting procedures** across the Union for grid projects at local, regional, national and EU level.



Contributing to an open dialogue with Ministries, NRAs and relevant authorities to ensure **forward-looking regulatory support** to accompany grid investment planning.



Participating in ensuring that all organizational conditions are reunited in terms of **smooth permitting procedures** linked to grid deployment.

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Electricity Market Design Reform



Electricity Market Design



Triologue negotiations: closed – **Agreement found on the 14th of December**

Next Steps: European Parliament Plenary voting and adoption at Ministerial level



- An agreement was found early in the morning of the 14th of December, ensuring that the Spanish Presidency closed the file before the end of its mandate.
- **Most controversial points have been CfDs (Art. 19b of the Directive – where the final text came close to the Council mandate) and PPA (Art. 19a of the Directive)**
- **Key provisions for DSOs do not seem to cause any major conflicts:**
 - **In the Regulation**
 - Peak shaving (Art. 7 a)
 - Dedicated measurement device (Art. 7d)
 - Tariff methodologies (Art. 18)
 - Assessment of flexibility needs (Art. 19c)
 - Commission reviews and reports (Art. 69)
 - Cooperation between TSOs and DSOs (Art. 57)
 - **In the Directive**
 - Tasks of DSOs (Directive – Art. 31)
 - Free choice of supplier (Article 4 Directive)
 - Energy sharing (Article 15a - Directive)
- **An in-depth analysis will be presented once the text is made available**

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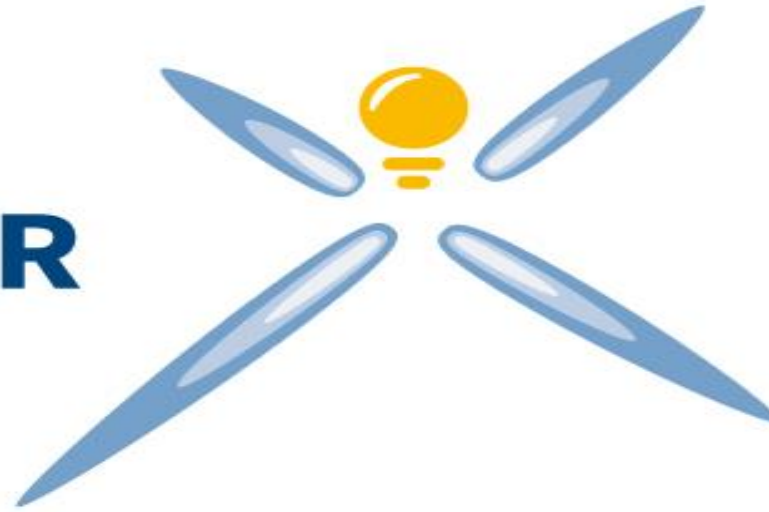


IV. Flexible Connection Agreements **CEER**



CEER

**Council of European
Energy Regulators**



CEER's Paper on Alternative Connection Agreements

Fostering energy markets,
empowering **consumers**.

Structure of the report

1. Introduction (background, objective, structure of paper)
2. Legal framework at the EU level
3. Mechanisms for DSO to access flexibility
4. Firm. vs alternative connection agreements
5. Legal and regulatory frameworks on the level of EU MS and existing cases for alternative connection agreements
6. CEER's observations and recommendations
7. Conclusions

- Introduction and problem statement: current and future grid congestion issues due to electrification and decarbonisation ambitions across Europe
 - Analysis of alternative connection agreements (ACAs) as a potential solution for DSOs to access flexibility

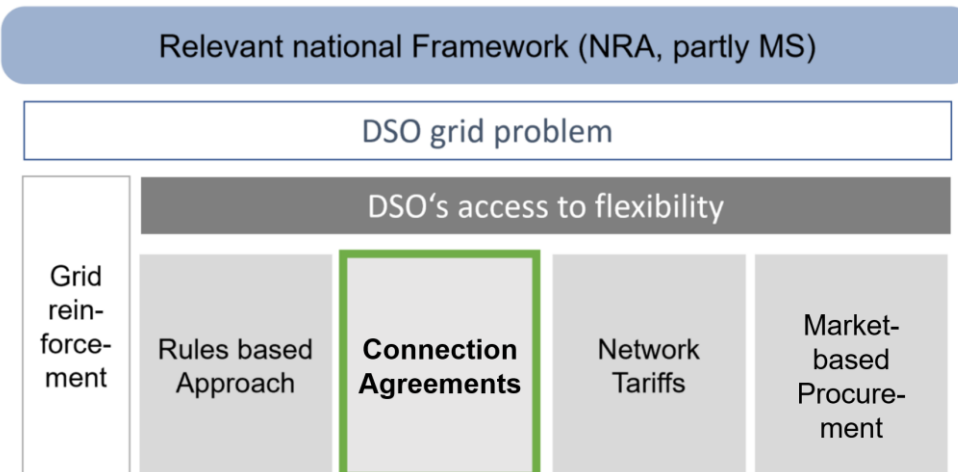
Key questions investigated:

- What is laid down in the European legislation relating to alternative connection agreements?
- What types of different alternative connection agreements exist?
- Interactions between alternative connection agreements and other measures for DSOs to access flexibility?
 - ▶ Other measures are rules-based, tariffs and market-based approaches
- What can be observed from existing country practices?



Mechanisms for DSOs to access flexibility

- Flexibility as an alternative or an interim solution to grid reinforcements
- Connection agreements identified as one of the ways for DSOs to access flexibility in a previous CEER paper



Flex category	Frame	Financial	Time frame	Delivery
Rules based	EU network codes/ guidelines and/ or national rules	Possibly shift of costs from DSO to network user, typically no compensation	As in framework defined (usually continuously)	Binding
Connection agreement	National rules, contract may be individual	Possibly reduction of cash flow from network user to DSO, possibly higher/lower costs network user, initial or when change (e.g. capacity)	As in framework defined (usually continuously; could also be time-limited)	Usually binding
Network tariff	National rules, may include options for network users, may differ per region, DSO etc.	Reduced cash flow network user to DSO	As in framework defined, Periodically / (pre)determined periods (typically monthly with yearly changes)	Usually not binding; interruptible could be binding
Market based procurement	National rules (based on EU legislation)	Typically DSO to flexibility provider Reservation: initial / periodically /without Activation: per delivery; Freedom of design includes: Fixed prices/caps, obligations regarding availability, accessibility etc.	Agreed period Optional / As long as bid is available	Usually Binding

Source: CEER (2020) Paper on DSO Procedures of Procurement of Flexibility

Legal framework for alternative connection agreements at the EU level

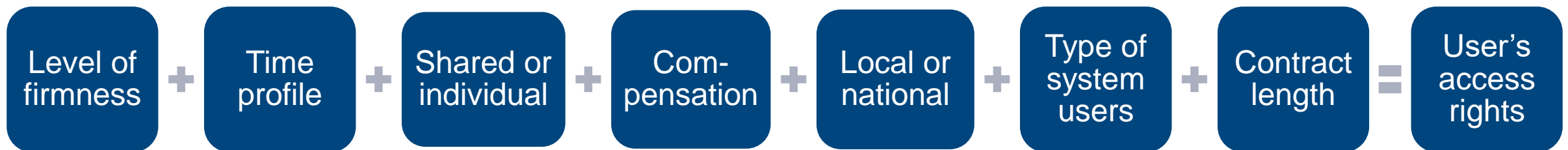
- Relevant articles in the EU Directive that relate to alternative connection agreements for DSOs:
 - ▶ Art. 6 – Third party access (non-discriminatory access (within a reasonable timeframe))
 - ▶ Art. 32 – Incentivising flexibility (incentivise DSOs to use flexibility services, market-based approaches preferred, but derogations possible)
- Note: No Article for DSOs that would mirror content of Article 42 for TSOs (which explicitly allows the use of alternative connections for TSOs)



ACAs' design principles and attributes

- Firm capacity contract = system user can always access their full contracted capacity
- ACAs can be designed to take many forms (see below)
 - ▶ A non-exhaustive list of types of contracts is identified in the report
- Careful consideration is needed on:
 - ▶ Design principles (e.g. non-discrimination, non-distortion, efficiency)
 - ▶ Interactions between other flexibility mechanisms (especially market-based)

Access rights are a combination of different access choices:



Country analysis of current practices relating to ACAs

- Input gathered from 10 European NRAs on legislative status, existing uses, key benefits and issues etc. (included only countries that are involved with ACAs in any degree!).
- The legislative (and regulatory) status of ACAs varies between countries
 - ▶ Allowed in 7 countries, either explicitly (5) or implicitly (2)
 - ▶ Only possible via exemptions in 3
- High prevalence of ACAs in Wallonia region of Belgium (but very few "activations"), and somewhat prevalent in Great Britain (incentives and reporting for RII02), Norway (for generation since 2019 and consumption since 2021), France and Austria.
- Specifics on the exact practices (e.g. types of contracts) varies greatly and was difficult to summarise at this point.
- Current or expected network issues (congestion) cited as one of the key reasons for consideration across many NRAs (benefit of faster network connection times).



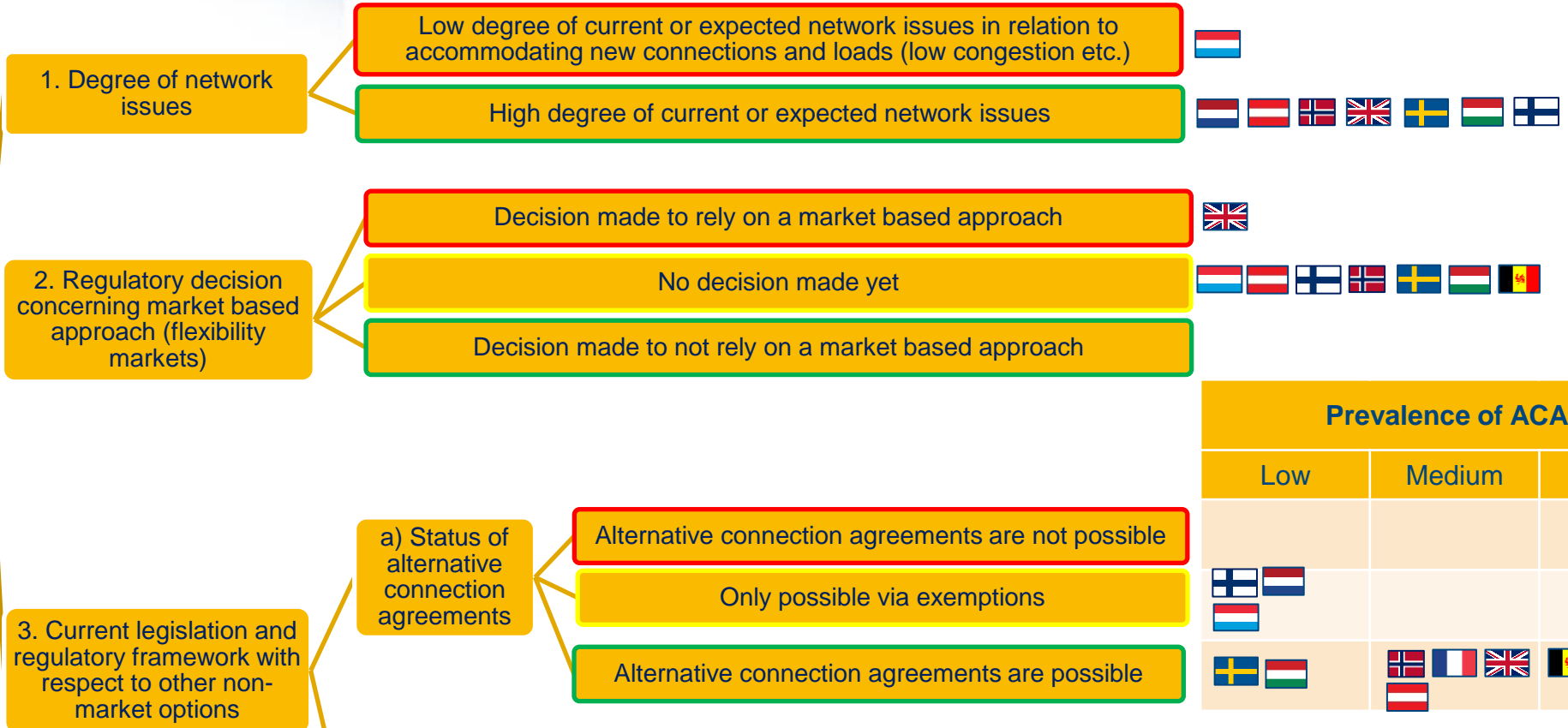
- AT
- BE (Wallonia)
- NO
- FI
- GB
- LU
- SE
- FR
- HU
- NL

Illustration of the key factors that impact the regulatory application of alternative connection agreements

DSOs' choice between alternative connection agreements or other ways to procure flexibility to solve local network issues

These options can be an alternative or an interim solution to grid reinforcements:

- Rules based approach
- Network tariffs
- Connection agreements
- Market based approach



Prevalence of ACAs		
Low	Medium	High

- Legend:**
- Factors that support the use of alternative connection agreements
 - Factors that hinder or decrease the need for alternative connection agreements

For Austria and Hungary, price signal varies depending on the connecting user.

Key observations and recommendations

- There are large differences between countries in the implementation, prevalence and regulation of alternative connection agreements.
- NRAs need to carefully assess the interaction between alternative connection agreements and other, especially market-based mechanisms for DSOs to access flexibility if considering their implementation.
- Alternative connection agreements could be considered in the case of underdeveloped (local) flexibility markets, to prevent strategic bidding in local flexibility markets, or as a temporary instrument to connect new users that can only be connected on a firm basis once ongoing network reinforcements are realised.
- Successful implementation of alternative connection agreements requires smart grid operation by DSOs, a well-informed NRA and a fit-for-purpose regulatory design.
- Inevitably, the current legal and regulatory status of alternative connection agreements affects implementation.





QUESTIONS?



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V. Coffee Break



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VI. Revenue Regulation



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Revenue Regulation Framework Case Study - Norway



A nighttime photograph of a cityscape featuring a large bridge with light trails from traffic. The scene is illuminated by city lights and the bridge's structure. A large, semi-transparent circular graphic with a network of blue dots and lines is overlaid on the left side of the image.

Insight into the economic regulation in Norway

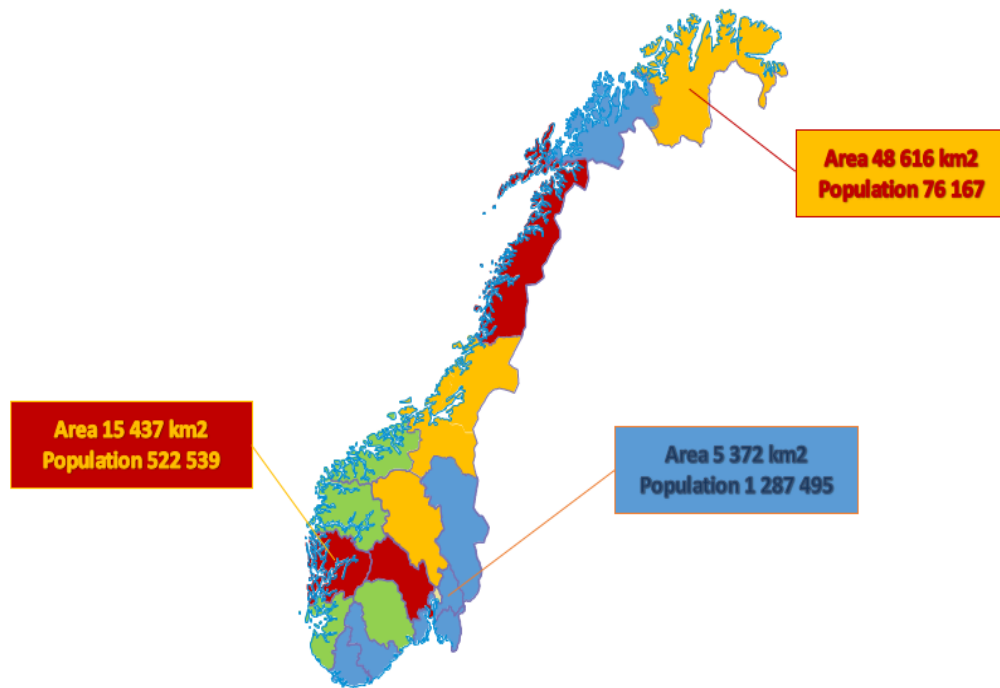
Lisbeth Vingås
Director Regulatory Affairs, Elvia AS

The grid in Norway is built to handle electrical heating in cold winter hours

- Norway is a wide stretched country where both geography and topography vary between grid areas
- Production of electricity is close to 100% based on hydropower, so climate goals will mainly be met by electrification of transport
- Winters are cold and summers can be warm
- Mainly electrical heating
- Average consumption household
 - 20 000 kWh/years
 - Capacity: 4-5 kW

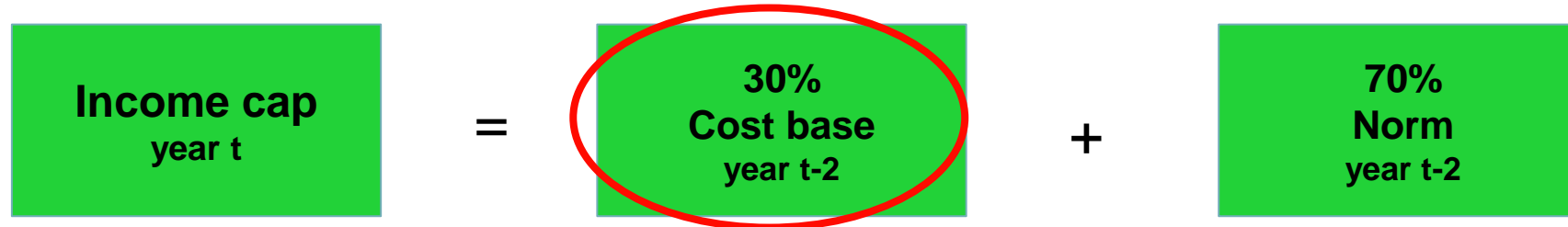


There are 90 DSOs (1 TSO) in Norway and the geography is different through the country



Norway has a yard-stick model with annual income caps based on 1-year data

A new income cap is calculated each year based on annual economic and technical reporting to the NRA

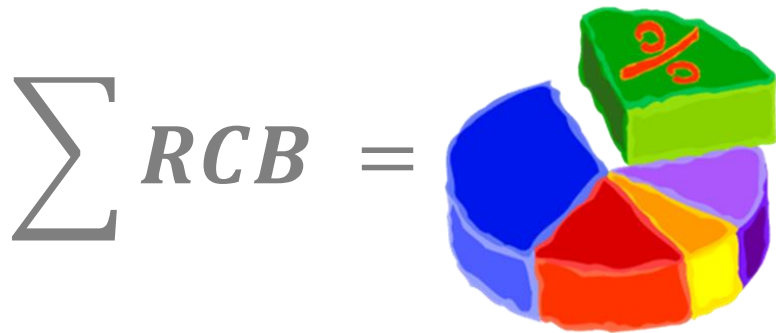


Regulated cost base (RCB) = OPEX + CENS + Technical losses + Depreciation + (Book-value*1% work.cap*WACC)

Income cap for year t is based on costs from t-2, but there is a mechanism that compensate for the 2-year lag on capital cost to increase incentives for investments

The industry's total return is given by the regulated WACC

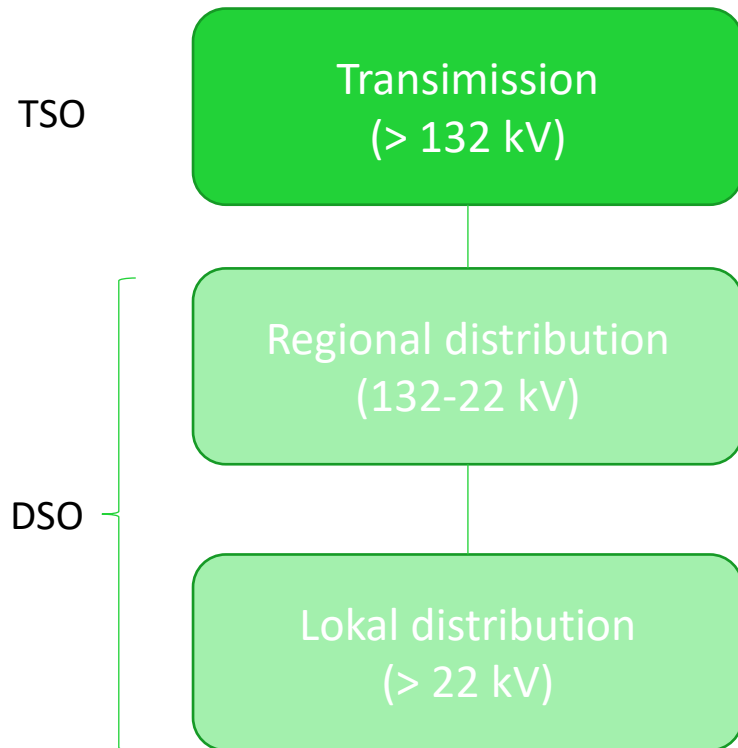
Regulated cost base (RCB) = OPEX + CENS + Technical losses + Depreciation + (Book-value*1% work.cap*WACC)



RCB: regulated costbase

- The total costbase for all 90 DSOs constitutes the total income («cake») that the industry is entitled to.
- If the industries cost increase, the cake increases and by versa.
- How much of the RCB each DSO will get covered (and thereby their rate of return) depends on their performance in the competition
- Efficiency > average = rate of return > WACC, and by versa
- Bigger cake = larger basis for the competition

Norway operated with 3 grid levels



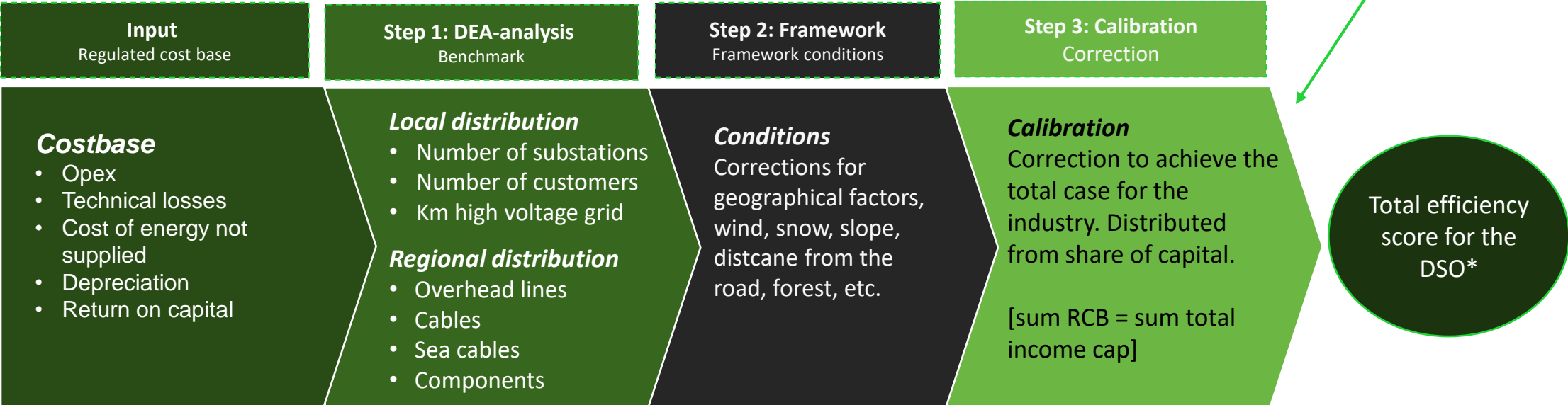
- Many DSOs own both regional- and local grid
- DSO gets one income cap – distribute to grid level
- Legal regulation different for different grid levels
- Tariffs different for different grid levels

DSOs part of the «cake» is decided through benchmark

$$\text{Income cap year } t = 30\% \text{ Cost base year } t-2 + 70\% \text{ Norm year } t-2$$

Investment incentive (*) given here. The higher share of capital cost the more you get from the calibration

- The norm and efficiency score is decided in three steps:



An example, efficiency score for the company DSOx

	Step 1 – DEA	Step 2 – conditions	Step 3 – calibration	Total efficiency score for grid level
DSOx	97%	-4%	+7%	100%

DEA done in two steps. Front is sat by 5-year average data. Gives DSOx a reference-company. DSOx RCB for one year is than compared with the 5-year average RCB for the reference company

DSOx framework conditions are easier than the framework conditions for its reference-company from DEA, so DSOx efficiency-score is considered to high and will be taken down

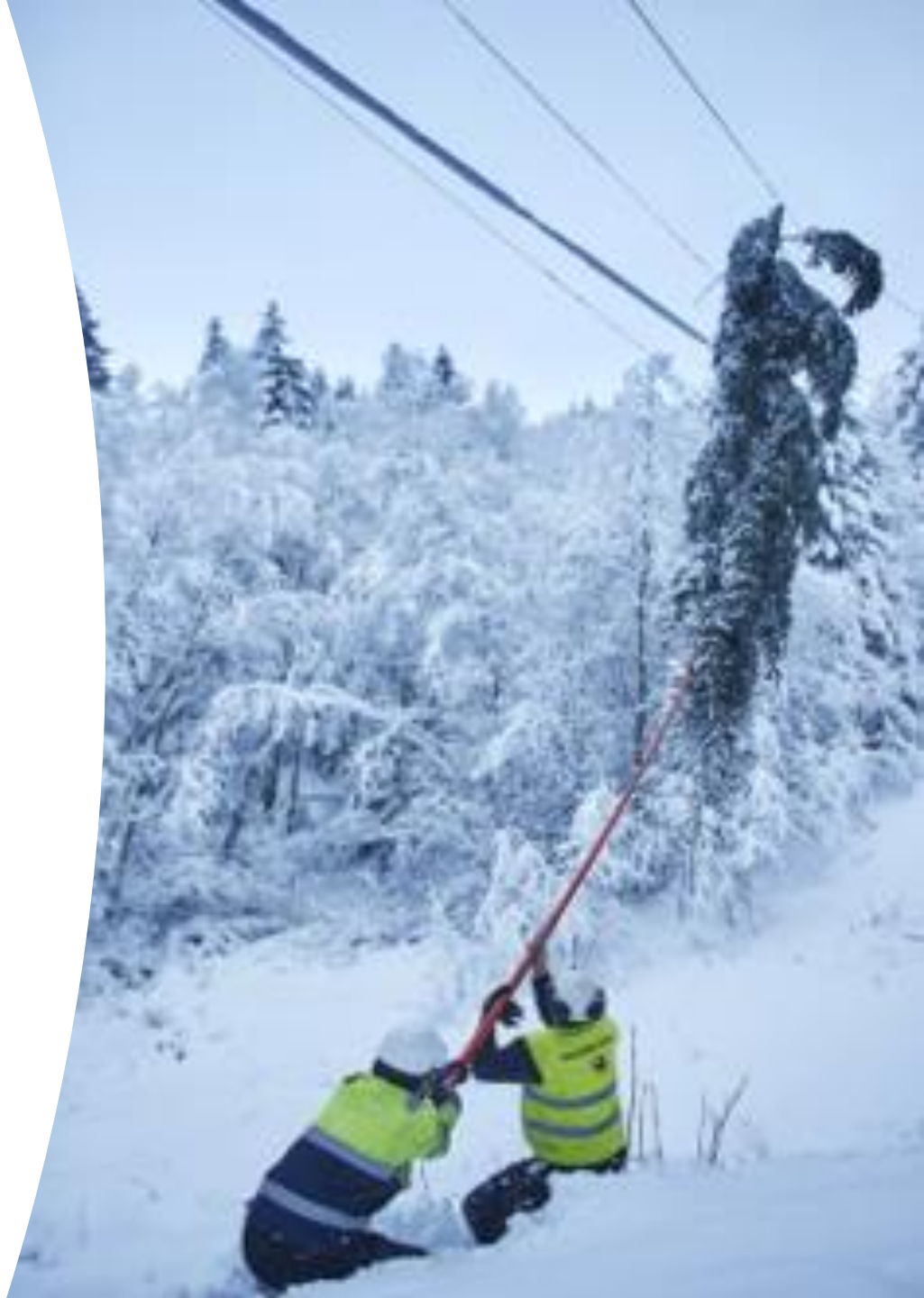
Total income cap for the industry after step 2 did not give the total cake. The deviation is handed out to the DSOs based on their share of capital cost – and DSOx share gave them 7%

Total efficiency score for DSOx for this grid level. 100% means DSOx will fully cover their RCB in that grid level (rate of return = WACC)

CENS is included in the income cap model to assure adequate quality

* CENS = cost of energy not supplies

- NRA has prescribed a cost function for calculation CENS.
- CENS vary with the length of the interruption, time of interruption, type of customer etc.
- CENS is included in the regulated cost base as any other costs.
- CENS affect your efficiency score (norm) and is deducted from your allowed income the year the interruption occurs.



From income cap to tariffs

Investment
incentive (*) given
here. Income on
investment
instantly

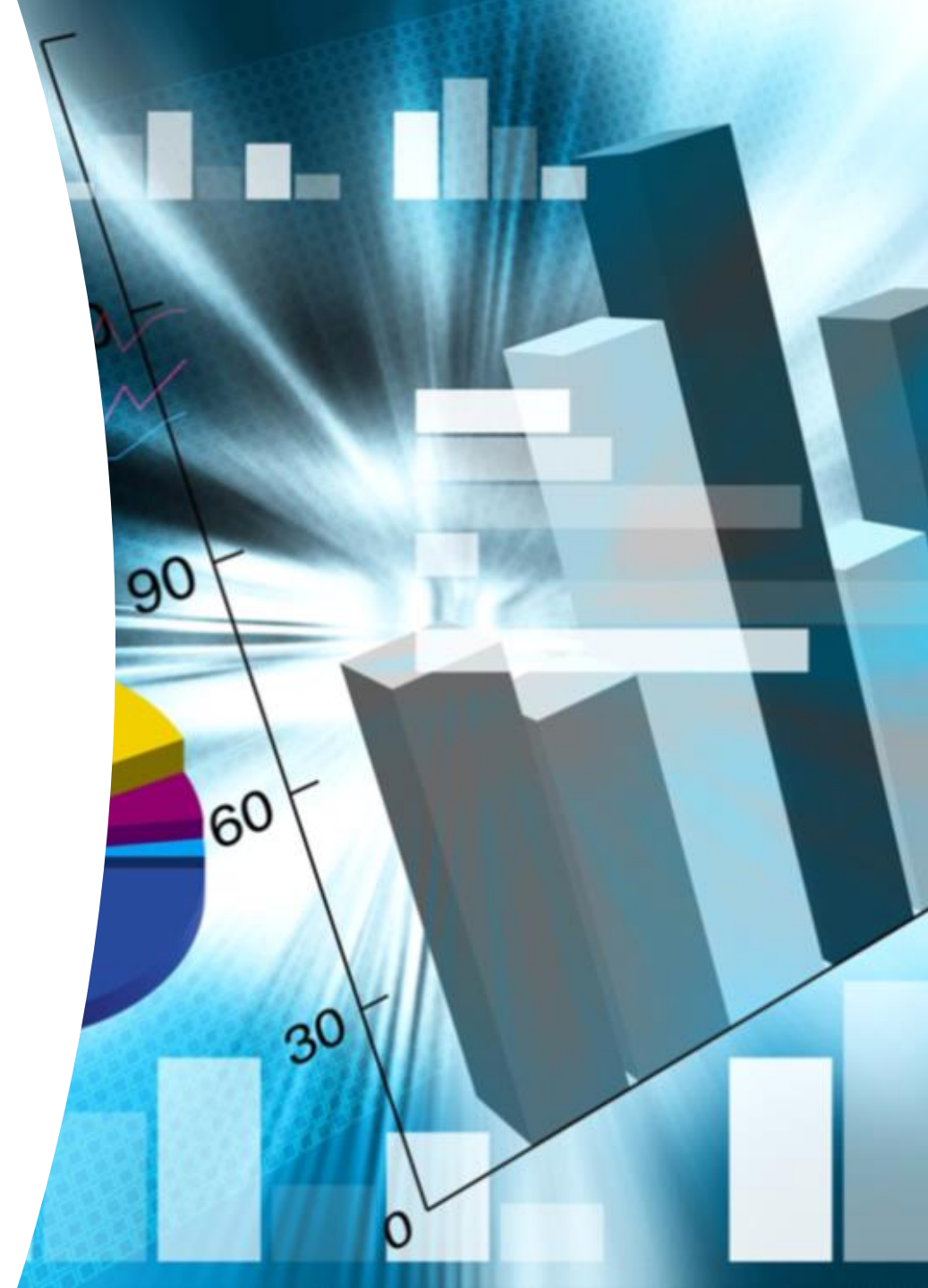
Income cap

- + Cost from higher grid levels
- + Surplus/deficit income
- + Property tax
- + Compensation timelag investment
- + Cost national meter-hub
- + R&D-approved cost
- Annual CENS

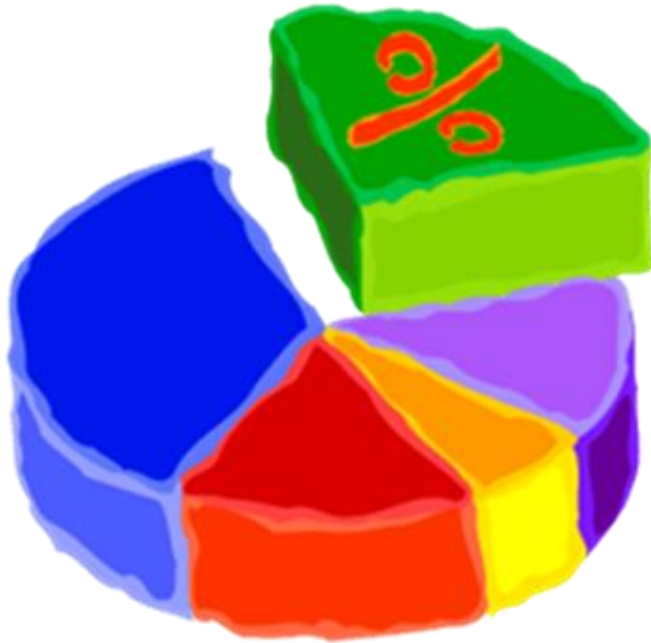
= SUM allowed income before taxes

- + Energy fund 1 øre/kWh (ekskl. mva)
- + Electricity tax 15,84 øre/kWh (ekskl. mva)
- + VAT 25 %

= SUM allowed income after taxes



The income cap model gives strong incentives for cost efficiency and ok incentives for grid investments



Competition

- Your share of the cake depend on what others do

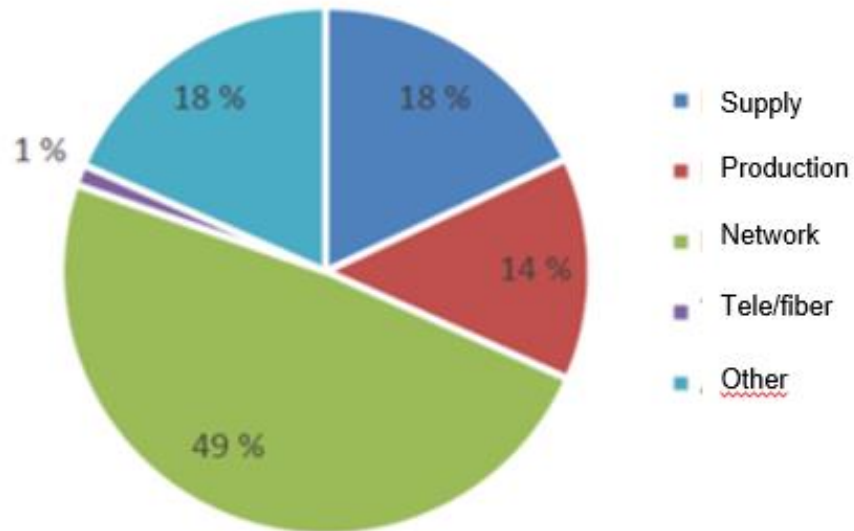
OPEX

- Increase in opex on the margin will increase your income with approximately 50%.
- Reduction in operation cost – reduces income with approximately 50%

Investments

- Cost recovery from investments vary on factors like grid level, new and re-investments, length of depreciation etc. In general new investments give more cost recovery than reinvestments.
- Reinvestments give more cost recovery than opex.

Both the economic regulation and the regulation on unbundling incentives mergers



8 DSOs > 100 000 customers
43 DSOs < 10 000 customers
23 DSOs < 5000 customers

The NRA decided in 2021 that all DSOs shall be legal unbundled from ALL other activities

From 2021 DSOs with more than 10 000 customers shall be functional unbundles from ALL other activities.

DSOs must have separate branding

This together with high level of norm/competition in the income cap model should incentivies more mergers

Elvia

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Anticipatory Investments Case Study – the UK



Anticipatory Investments - UK James Pleass

18 December 2023



Accelerated Strategic Transmission Investment (ASTI)

What is it?

- Ofgem's new accelerated strategic transmission investment (ASTI) framework illustrates the scale of the challenge faced by electricity transmission network owners in Great Britain
- National Grid Electricity Transmission, Scottish Power Energy Networks and SSEN Transmission, known collectively as 'TOs,' are responsible for delivering the extensive onshore transmission system enhancements that are needed to achieve the Government's 2030 power sector decarbonisation target
- The TOs also have a key role to play in fulfilling the government's ambition to connect up to 50GW of offshore wind capacity to the GB grid by the same date

Accelerated Strategic Transmission Investment (ASTI)

What is it? cont...

- The ASTI decision identifies 26 strategic transmission projects with an estimated cost of £20 billion which will be taken forward under a streamlined regulatory approval and funding process
- This process represents a significant departure from the multiple regulatory assessment stage gates in the existing regulatory approval and funding process, known as the Large Onshore Transmission Investment (LOTI) regulatory framework
- The removal of the 26 projects from is a clear recognition that the necessary investment would not be made at the pace required to achieve the government’s power decarbonisation and offshore wind connection ambitions
- The new framework also represents a move towards what Ofgem calls a “co-ordinated top-down network planning approach”

Accelerated Strategic Transmission Investment (ASTI)

The Projects

- The 26 ASTI projects span the length and breadth of the country and include the Western Isles HVDC Link, which will establish the first connection between the island of Lewis in the Outer Hebrides and mainland Scotland. The HVDC Link will play an important role in the development of the offshore wind capacity in the waters off the northwest coast of Scotland
- Other ASTI projects also include substantial network enhancements designed to alleviate the bottlenecks which currently restrict the flow of wind generation from Scotland to the major demand centres in the south of the country, particularly during periods of high renewable generation

Accelerated Strategic Transmission Investment (ASTI)

What's in it for Consumers

- The 26 projects will be taken forward outside the Competitively Appointed Transmission Owner (CATO) regime for the procurement of onshore electricity transmission, which will be introduced if the proposals in the Energy Bill currently before parliament are enacted in their present form
- This will deprive consumers of the cost savings that the competitive process would potentially deliver - particularly in the long-term cost of capital
- However, at the same time, consumers will see a benefit from the accelerated development of the lower cost renewable generation which will be facilitated by the ASTI projects by, for example, enabling the connection of up to 50GW of offshore wind sooner than would otherwise be possible

Accelerated Strategic Transmission Investment (ASTI)

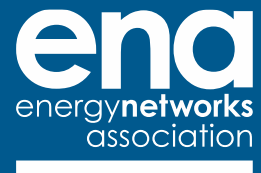
Bringing it into Effect

- Ofgem is engaging with the TOs to progress the development of the new conditions which will have to be added to their transmission licences to bring the ASTI framework into effect. The regulator's current intention is that the statutory consultation for the required licence modifications will be launched in the spring, with a view to implementing the framework in licences in the summer. Ofgem recognises that the TOs' delivery plans make provision for expenditure on ASTI projects from Q4 in 2022, but also considers that the policies reflected in the ASTI decision will give the TOs sufficient reassurance to start work ahead of the required licence modifications
- Ofgem's analysis concludes that consumers will be better off overall under ASTI than under the "business as usual" counterfactual. Its assessment of the benefits to consumers under its central scenario are estimated at £2.1bn, with an estimated benefit of £3.1bn in the best-case scenario and £0.9bn in the worst-case scenario

Accelerated Strategic Transmission Investment (ASTI)

Rewards and Penalties/Conclusion

- The ASTI decision strikes a balance between the acceleration of the regulatory approval and funding processes and ensuring that consumer interests are protected by a robust cost assessment and system of incentives, including output delivery incentives, for the accelerated delivery of transmission assets. These will reward TOs for meeting target delivery dates and penalise them for failing to meet target dates
- The aggregate reward and penalty for each project is to be capped at 10 percent of the forecast total expenditure for the project, with the reward and penalty rates based on a forecast of the consumer detriment arising from a delay and of the consumer benefit arising from acceleration



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The voice of the networks



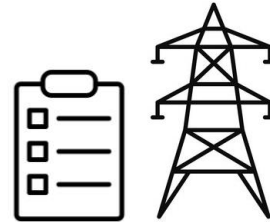
GEODE Position Paper Revenue Regulation



GEODE Position Paper - Draft



Looking at **revenue regulation** as a toll for grid investment

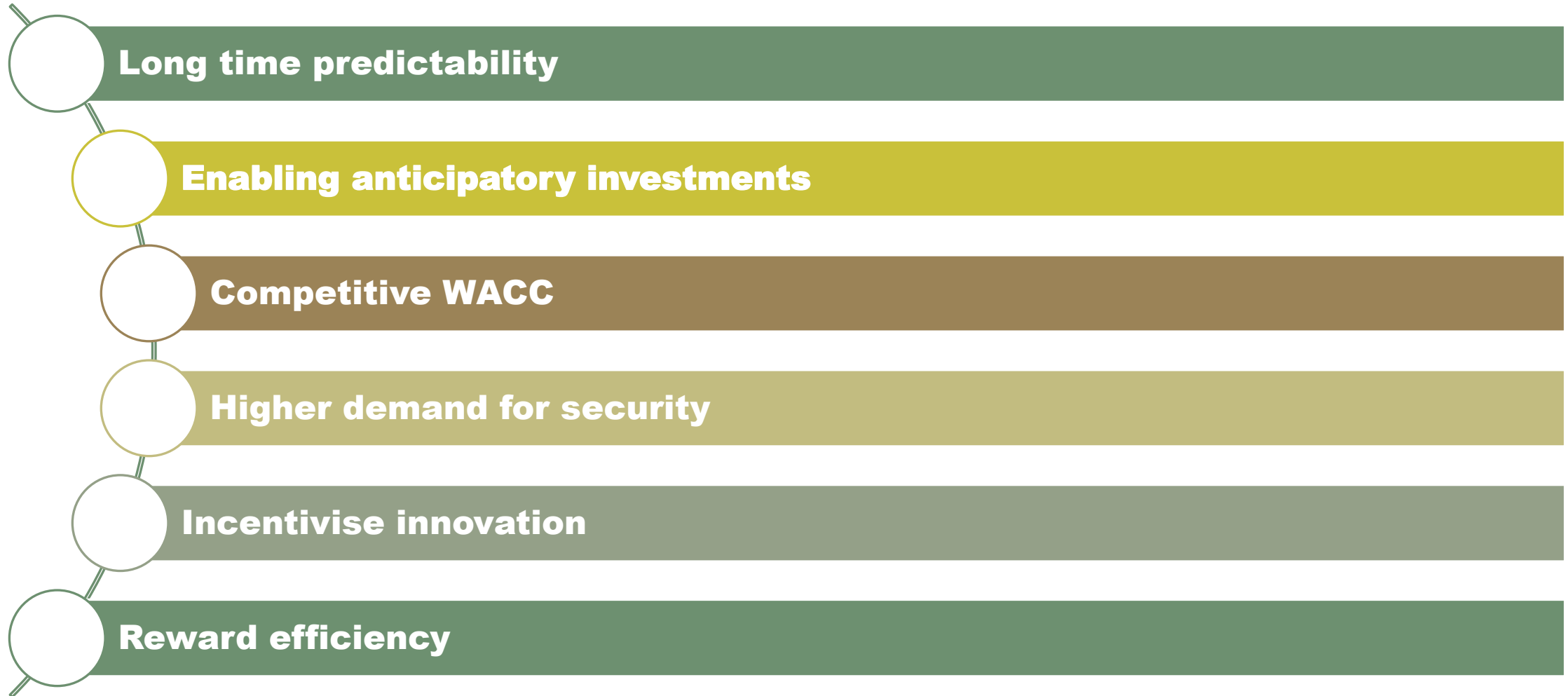


Highlight several **principles** that will benefit the development of the **next generation of European local electricity grids**



Provide **examples** from member states

GEODE Position Paper - Principles



Background

- More and stronger electricity grids needs for electrification = more investments!
- Sufficient revenues necessary for new investments
- Towards more independent regulators (German court case 2021)
- Many member states considers changes in the revenue regulation
- Grid investments needs to be competitive with other investments (profit)



Revenue regulation needs to be predictable and long term

- Grid investments usually have a financial life span of several decades. Tariffs paid by the customer today is financing investments made in the previous century.
- In such environment, the income regulation models can not be changed every other year but needs to be **predictable, stable, and long term**.
- This will enable the DSO to plan their investments far ahead with a stable cashflow that is the benefit of a regulated entity.



Enabling anticipatory investments

- Investments (and indirect revenue regulation) are usually based on current demand. DSO's are incentivised not to build to much/to strong grid.
- Current electrification trend demands more & stronger grids now
- The income regulation of the future needs to enable anticipatory investments enabling the DSO's to at least to some degree **reinforce the grid in advance based on realistic projections.**
- The cost for society for insufficient access to electricity is much higher than the cost for a slight overcapacity.



Higher demand for security

- The demand for higher security of delivery is rising in the light on the current energy crisis in Europe. There is also in increased threat of both physical and cyberattacks to our infrastructure.
- As secure and stable electricity grid are a national interest, it is essential that that the income regulation allows sufficient investments in security measures.



Encourage smart grids

- Traditionally, cables have been the solution for bringing enough electricity to the customer.
- However, today there are several alternatives to secure sufficient capacity. Local flex markets, storage, load-sharing and conditional connections are competing ways of solving the electricity needs for our customers.
- A smart income regulation must stimulate the most efficient solution regardless of technology. **Are we in favour of TOTEX-regulation?**



Incentivise innovation

- Focusing on low grid tariffs for the customer, many income regulation models punish DSO's for innovation such as pilot projects.
- Being close to the customer and the only entity on the electricity market with a permanent customer relation, it is necessary for DSO's to engage in innovation. Income regulation models must allow that to a fair degree.



Reward efficiency

- A regulated entity such as a DSO works in an environment without competition.
- Therefore, an efficient revenue regulation must have adequate incentives for efficiency. DSO's with low outage levels & low distribution losses in comparison with others must be rewarded.



Competitive WACC

- The DSO business used to be a very low risk business compared to other sectors in society.
- It still is, but a number of risks has certainly increased in the last years:
 - Changes in the WACC
 - Rising costs such as security
 - Cash flow challenges (more expensive loans)
- Although local electricity distribution is a regulated monopoly, it usually competes with other investments. Therefore, the DSO business needs a competitive WACC to secure the necessary financial capital.



Securing cash flow

- *Something about the problem with cash flow when you have a regulated income for a period of years, but needs to invest heavily in short notice..... Today risk that DSO have to lend money with high interest in order to keep up with investments.....*



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VII. GEODE's Messages on Energy Sharing



Energy Sharing – Follow up Meeting 11

October



Grid cost not necessarily benefit from Energy Sharing – e.g. the Sun in Northern Europe is mostly shining in the summer – not in the winter when we have highest consumption, therefore collective self consumed energy will not reduce the load in the grid (and thereby not the grid cost), PV will only reduce the consumption in the summer, when the consumption is low anyway (and the capacity in the grid is high)

Virtual Energy Sharing - If you are virtually adjusting meter values based on sharing, you are at the same time removing the connection between the physical flow of energy and the payment for it. If sharing is done in a „local area“ – me and my neighbor – the problem is still there, but smaller than sharing over distances. If the virtual correction on meter values is only done on energy (net grid tariffs) this problem will not occur

Grid tariffs – If you do not reduce grid cost, the benefit from sharing should only be given on electricity price/energy

Harmonisation of procedures between administrations, DSOs, installers

Data exchange between actors, consumers, DSOs, suppliers

Establishment of an „energy sharing coordinator“ for communication with DSOs, suppliers (e.g. communication of energy sharing agreement)

Permitting

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VIII. AOB & next meeting



GEODE WEBINAR ON ENERGY SHARING



WEBINAR

Empowering Consumers: The Vital Role of DSOs in Energy Sharing

Friday, 1 March 2024
from 9:30-11:30 (CET)



Discussion



GEODE
SPRING
SEMINAR

2024

BRUSSELS 28 MAY

SAVE THE DATE

The banner features a background of solar panels under a bright blue sky with white clouds. The text is overlaid on a dark blue and green geometric design. The word "GEODE" is in white with a star-circle in the 'O'. "SPRING SEMINAR" is in white. "2024" is in white on a green diamond. "BRUSSELS 28 MAY" is in light blue. "SAVE THE DATE" is in white on a teal triangle.



Thank You!

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