WHEN TRUST MATTERS

Operational Metering Standards

Power Responsive Working Group

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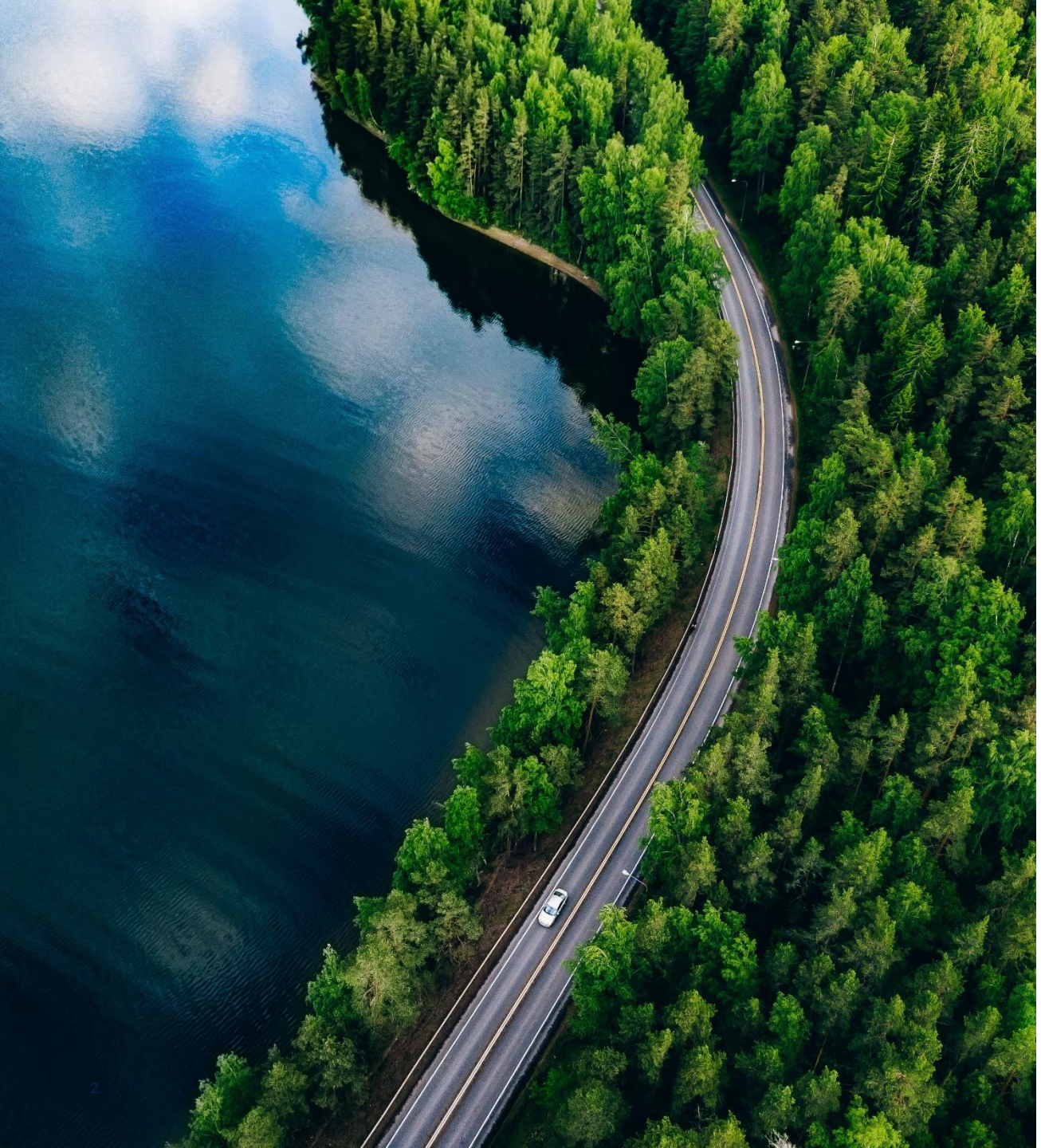
Principal Consultant
DNV Energy Strategy Advisory

20th May 2024



Agenda

1 **Introduction to DNV**

2 **Introduction & Scope of Work**
Key Contacts, Introduction and Project goals

3 **How we'll do it**
Approach, work plan, impact assessments

4 **Stakeholder Engagement**
Engagement plan, technologies in scope

5 **Engagement Dates**
Key dates

6 **Q&A**
Questions that have arisen during the meeting

DNV

1. Introduction to DNV

A global assurance and risk management company

159	12,500	100,000	100+	5% R&D
years	employees	customers	countries	of annual revenue

Ship and offshore classification and advisory

Energy advisory, certification, verification and monitoring

Software and digital solutions

Management system certification, supply chain and product assurance

DNV

2. Key Contacts

DNV

Principal Consultant Project Manager

Marellie Akoury-Shima

Senior Consultant, Project Coordinator

Joseph Weston

Subject Matter Expert in DER, Market Design, Electricity Markets

Hans de Heer

Senior Consultant Subject Matter Expert in balancing services

Angeliki Gkogka

ESO

Market and Network Insight Lead

Will Gratton

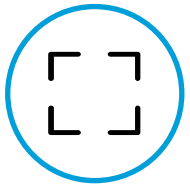
Power Responsive Manager

Callum Wright

Demand Side Flexibility Specialist

Calum McCarroll

2. Introduction

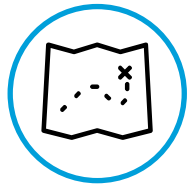


Situation

- **Distributed Energy Resources** (DERs) connecting to the distribution network **is increasing** due to Net Zero transition.
- **DERs** could provide cost-saving **flexibility services** to ESO and DSO and are **crucial for system operations.**

Complication

- **Current operational metering** requirements for participation in balancing services markets (i.e. frequency, latency, accuracy) are **designed for large power stations**, **hindering** the ability **of smaller providers** to meet these requirements.
- Meantime, ESO has set up the **Power Responsive**, a stakeholder-led programme, facilitated by the ESO, to **raise awareness on DER and DSR**, **ensuring equal opportunity** with the current BM participants when it comes to balancing the system



Next steps

- NGESO has chosen **DNV** to **independently review and assess**, using a transparent methodology:

1. The feasibility of the current operational metering standards for the Balancing Mechanism
2. Options to **optimise the standards** which:

✓ accommodate **diverse asset** providers

✓ enable **NG ESO to meet SQSS** requirements with the current and forecasted energy mix

2. Project Goals

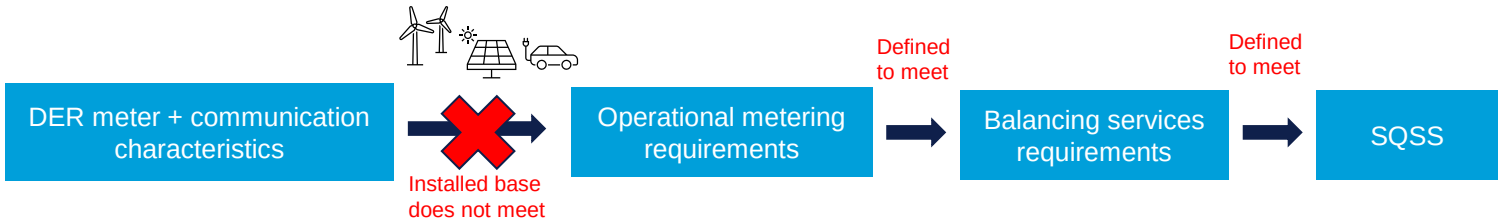
1. Assess the feasibility of the current metering standard using a clear and transparent methodology
2. Recommend optimised operational metering standards for the Balancing Mechanism which:
   - consider how providers with a diverse range of assets could meet the standards
   - consider learnings from regulations and processes used in Europe
   - allow NG ESO to continue meeting the SQSS with the current and forecasted energy mix
3. Assess the practicalities of adopting the newly proposed standards
4. Engage with ESO and external stakeholders to support the findings

3. How we will do it

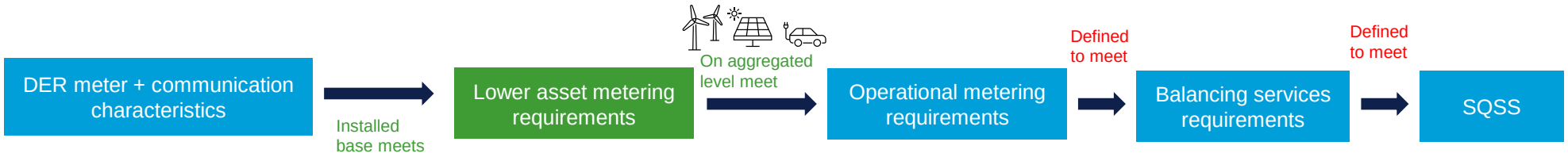
WP1	WP2	WP3	WP4	WP5
Assess current metering requirements, asset capabilities, barriers	European TSO benchmarking, metering future requirements and capabilities	Change and Impact Assessment (IA)	Monitoring & Implementation	Recommendations and final reporting
Stakeholder Engagement: BM Asset Mapping and Grouping Assess OM impact on SQSS OM requirements feasibility	**Stakeholder Engagement:** Asset and Meter manufacturer interviews for roadmap understanding	**Stakeholder Engagement:** In depth impact assessment on the SQSS compromising 4 different assessments	**Stakeholder Engagement:** Assess practicalities of adopting recommendations across different asset types and providers e.g. processes, data requirements, communication systems.	**Stakeholder Engagement:** Present findings, lessons learned, and next steps
May - July	June - July	July - September	October - November	November - December

3. Impact Assessment

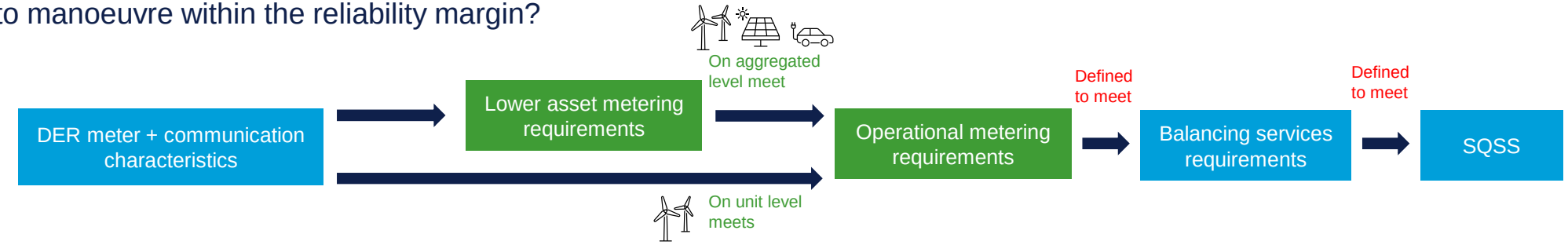
Current situation: most DER are not eligible to participate in balancing services



Impact Assessment Level 1: For aggregated units, can metering requirements be relaxed when there is no impact on aggregated level ?

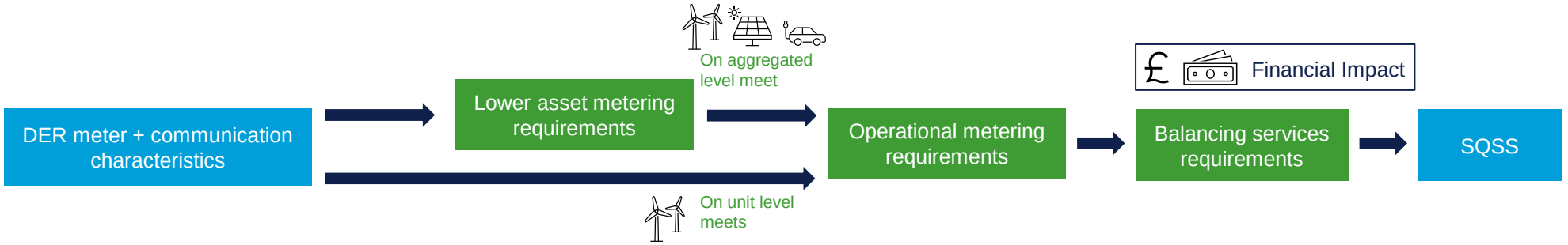


Impact Assessment Level 2: To what extent can operational metering requirements be lowered without affecting SQSS? Is there room to manoeuvre within the reliability margin?

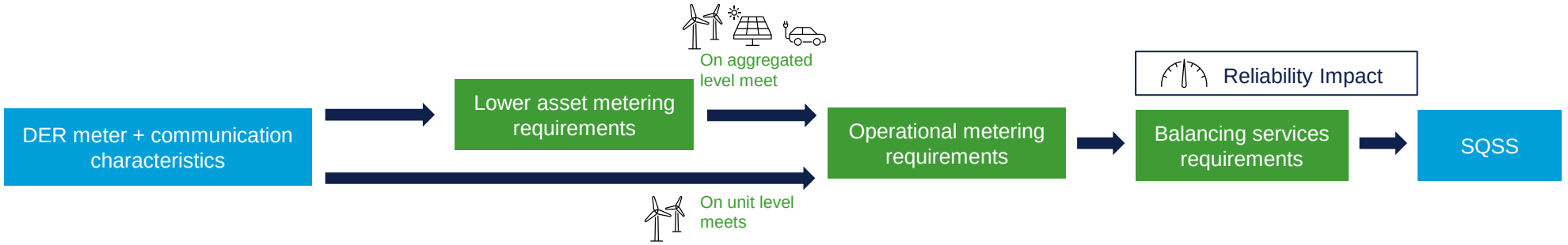


3. Impact Assessment

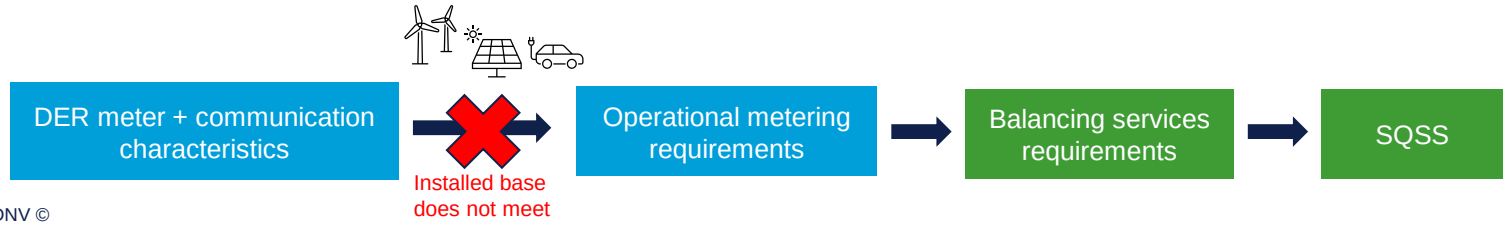
Impact Assessment Level 3a: To what extend can we allow financial impact on SQSS? (no impact on reliability, but financial impact)



(Optional) Impact Assessment Level 3b: To what extend can we allow impact on reliability?



Impact Assessment 4: No action, current and future impacts of most DER not participating in balancing services



4. Stakeholder Engagement

Aiming to understand:

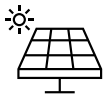
- Barriers / issues related to implementation of current OM standards
- Current and future asset types and distribution
- Meter technology and standards roadmap
- Practicalities of adopting potential optimised standards

4. Stakeholders we plan to engage with to ensure a transparent and optmised outcome

ESO Stakeholders	Industry Stakeholders
Market Requirements ○ Future Design and Development ○ Frequency Risk & Modelling ○ Balancing Services Optimisation	Balancing Service Providers ○ Aggregated (VLPs) ○ Non-Aggregated (e.g. BMUs and Embedded BMUs)
Product Owners ○ Balancing and SCADA systems, ○ Balancing Programme	Flexibility Service Providers (non-BM) ○ Aggregated ○ Non-Aggregated
System Security & Insight ○ Operational Metering Team ○ BM registration	Suppliers acting as BSPs
Network Operability	Meter Manufacturers
Zero Carbon Operability (DER, EV, Storage)	Asset Manufacturers
Market Change Delivery	Trade Associations
ENCC - Control Room	EU TSOs

4. Technologies In Scope for Impact Assessment*

Wind



Solar

EV Charger

Heat Pump / AC

Immersion

Battery Storage

Buildings (DSR)

Domestic Appliances

**<u>All asset types and sizes</u> will be considered during review of current OM standards*

5. Engagement Dates

Type	When
Working groups	Every time WP completed Ad-hoc e.g. WP1 interview feedback
1:1 and/or group interviews	May/June (DNV will get in touch with selected representative of each stakeholder group)

6. Questions?

To email questions contact: power.responsive@nationalgrideso.com

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Contact: marellie.akoury@dnv.com

www.dnv.com