



FUTURE GRIDS

fast, safe, sustainable

CSR perspectives on RESERVE work

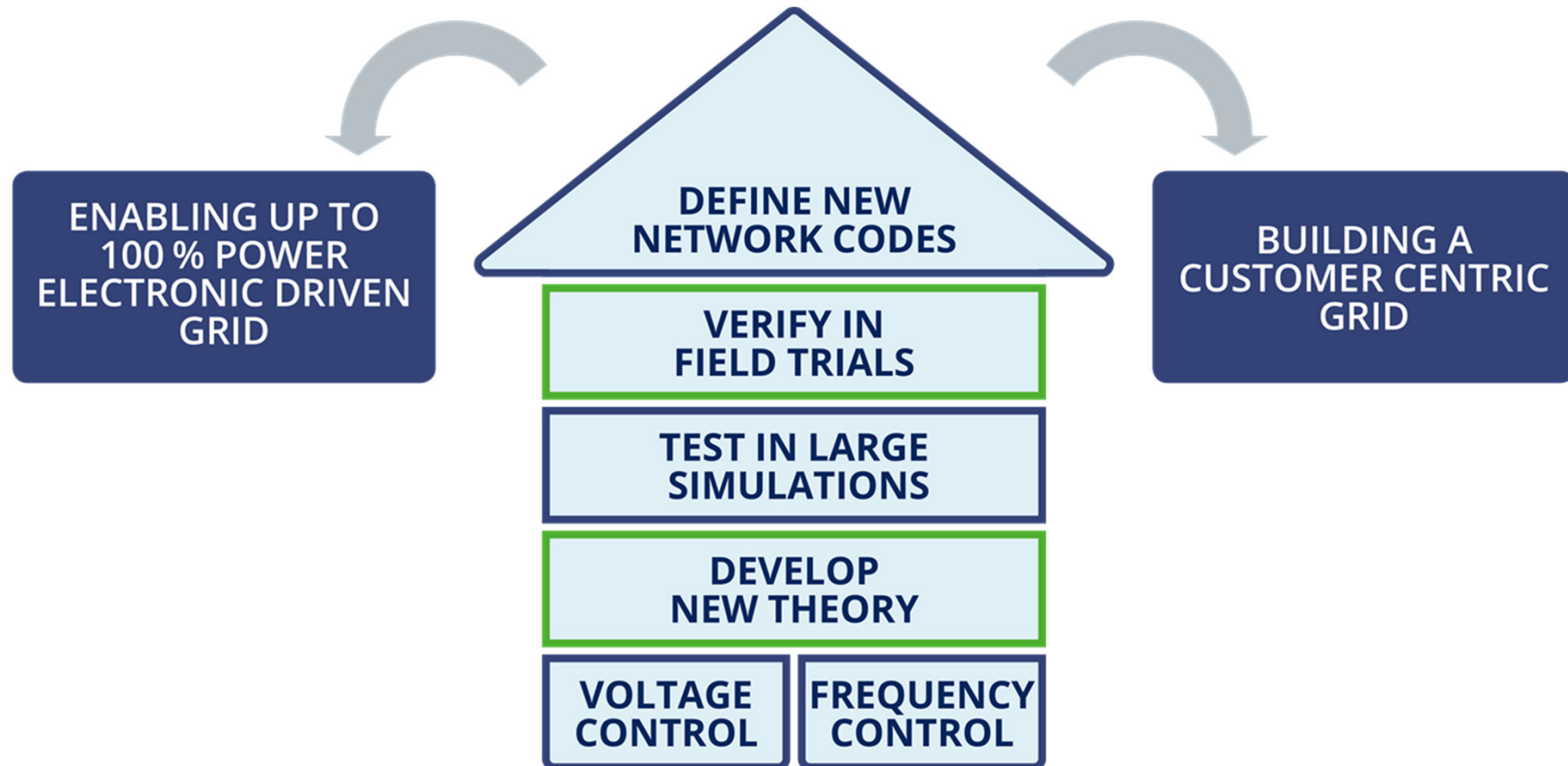
19th June 2018

Aachen, Germany

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Research Assistant
CON RWTH



WORK PACKAGE OVERVIEW



OUTLINE



RESERVE from CSR Perspective
Impact of RESERVE
Sustainability and CSR
Work to be Done

RESERVE from CSR Perspective

Impact of RESERVE

Sustainability and CSR

Work to be Done

RESERVE FROM CSR PERSPECTIVE




The aim of RESERVE



**NC #1:
NEW RES INVERTERS**

RESERVE &
guidelines



**NC #2:
NEW FC CONCEPT**

RESERVE sup
interaction between actors



**NC #3:
SYSTEM SWING DYN.**

RESERVE &
new actors



**NC #4:
INERTIA REQUIREM.**

RESERVE &
less mechanical iner



**NC #5:
NEW VC CONCEPT**

RESERVE &
emerging business models

→  has an economic, ecological and social responsibility

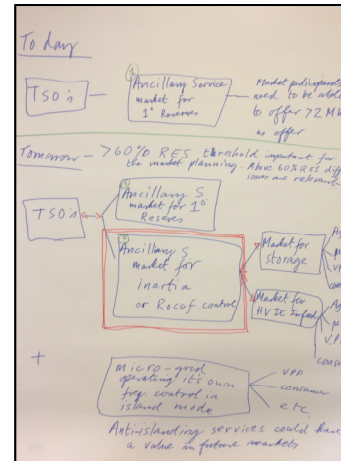
BRINGING ALL PARTNERS TOGETHER



Workshops on CSR and Business Models



Aachen, January 2017



Brussels, January 2018



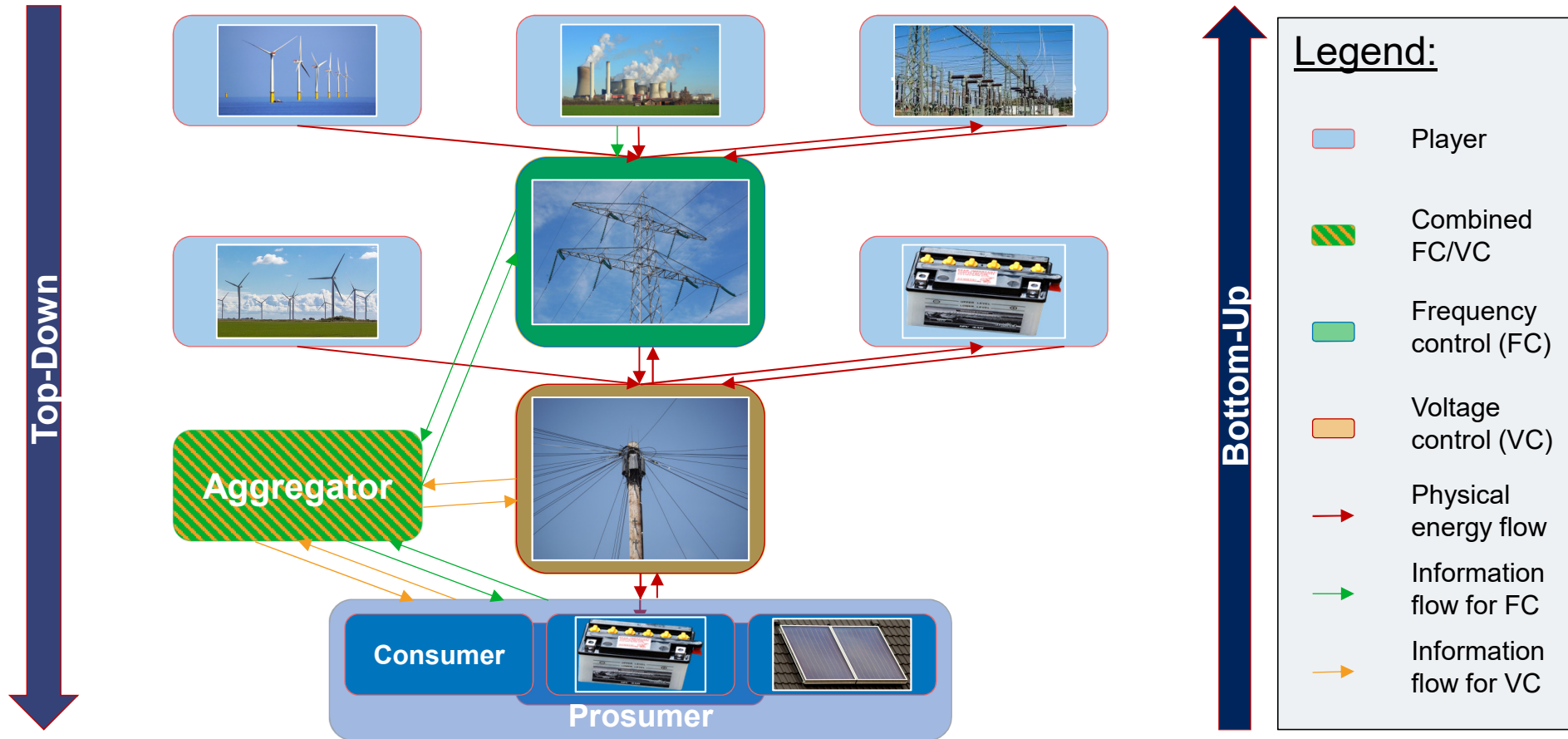
RESERVE from CSR Perspective

Impact of RESERVE

Sustainability and CSR

Work to be Done

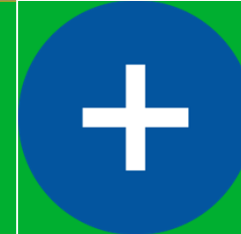
TECHNICAL & MARKET MODEL



CHANGING BUSINESS MODELS IN RESERVE



Aggregators



Manufacturers of storage devices



Manufacturers of power electronics



Changing Role of System Operators (TSO/DSO)



Providers of ICT systems



RESERVE from CSR Perspective

Impact of RESERVE

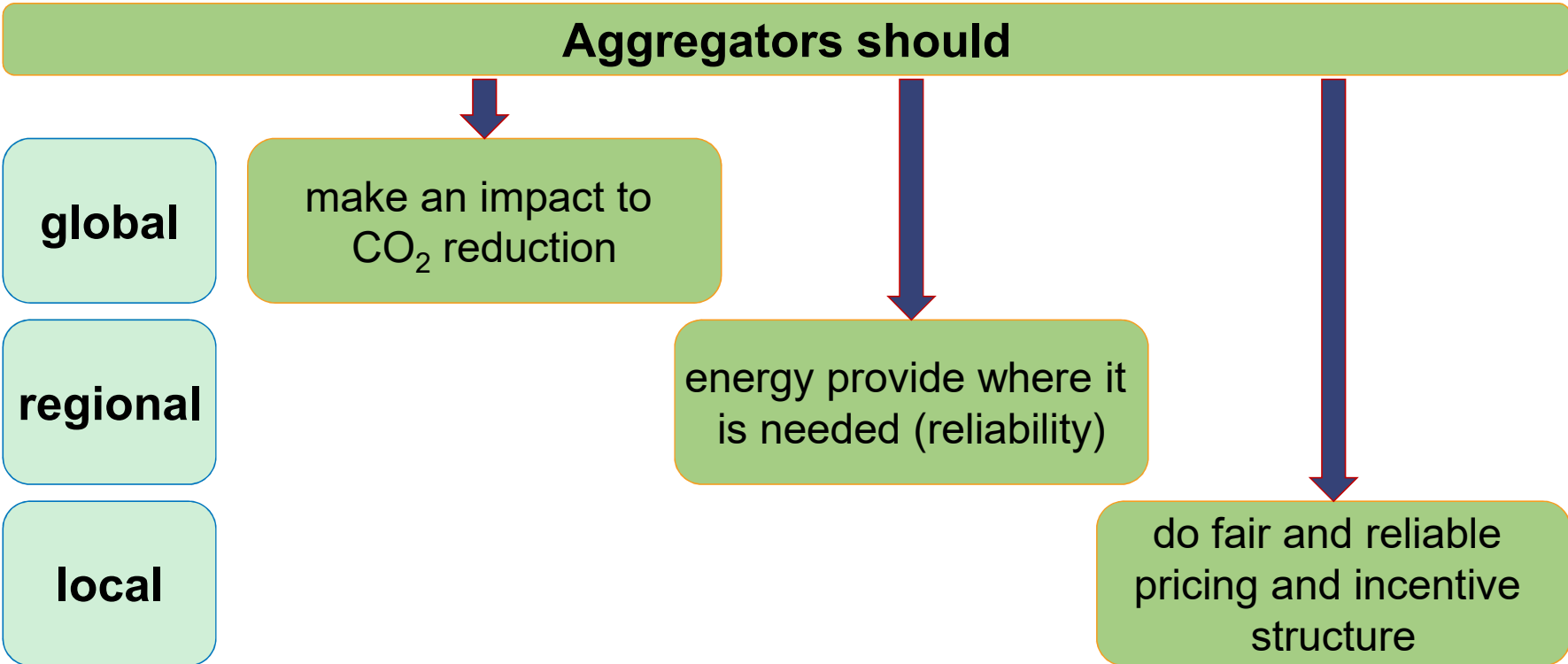
Sustainability and CSR

Work to be Done

ETHICAL BUSINESS MODELS



... to support up 100% RES integration in today energy system



INVESTIGATIONS ON AGGREGATOR



Business fields/departments of an aggregator due to RESERVE's needs

What services/products does the aggregator provide?

Voltage Control



RESERVE

...is presenting a new way of VC

ICT platforms / communication services



RESERVE

...is connecting different actors

Services for the day-ahead market



RESERVE

...is covering new market conditions

Mediation of prosumers



RESERVE

...is enabling involvement of the customers

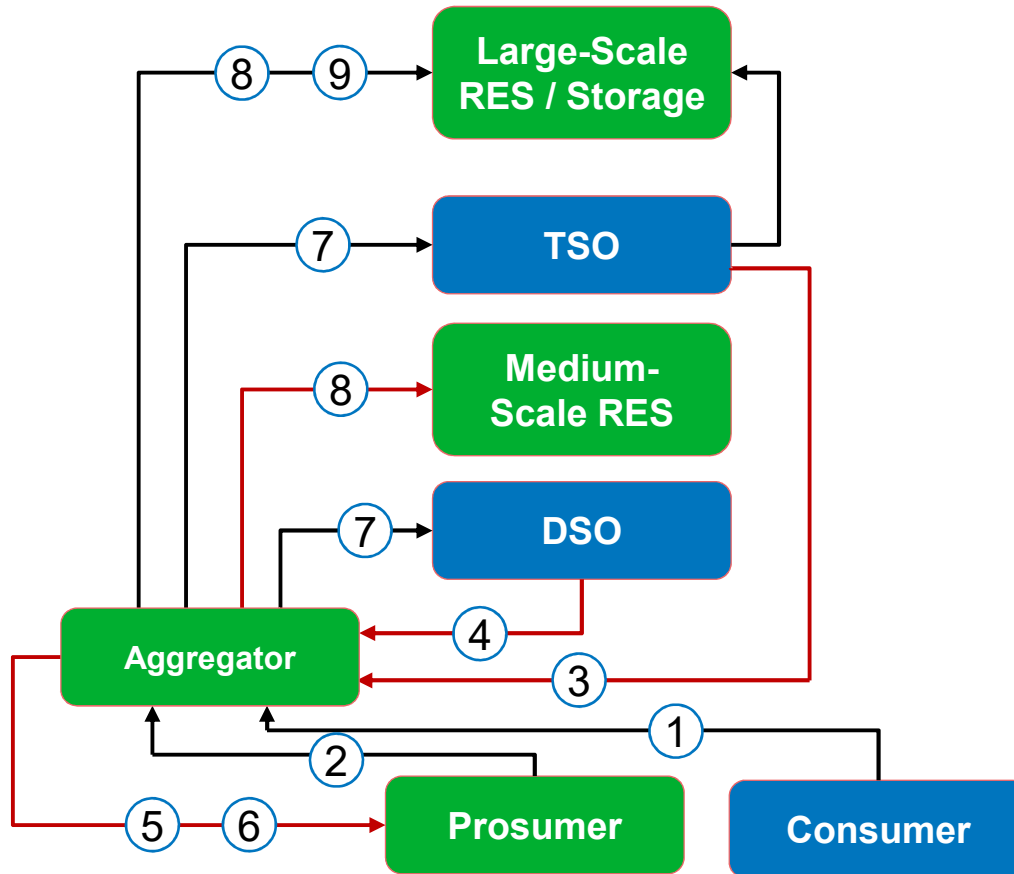
Energy supply



RESERVE

...guarantees affordable energy

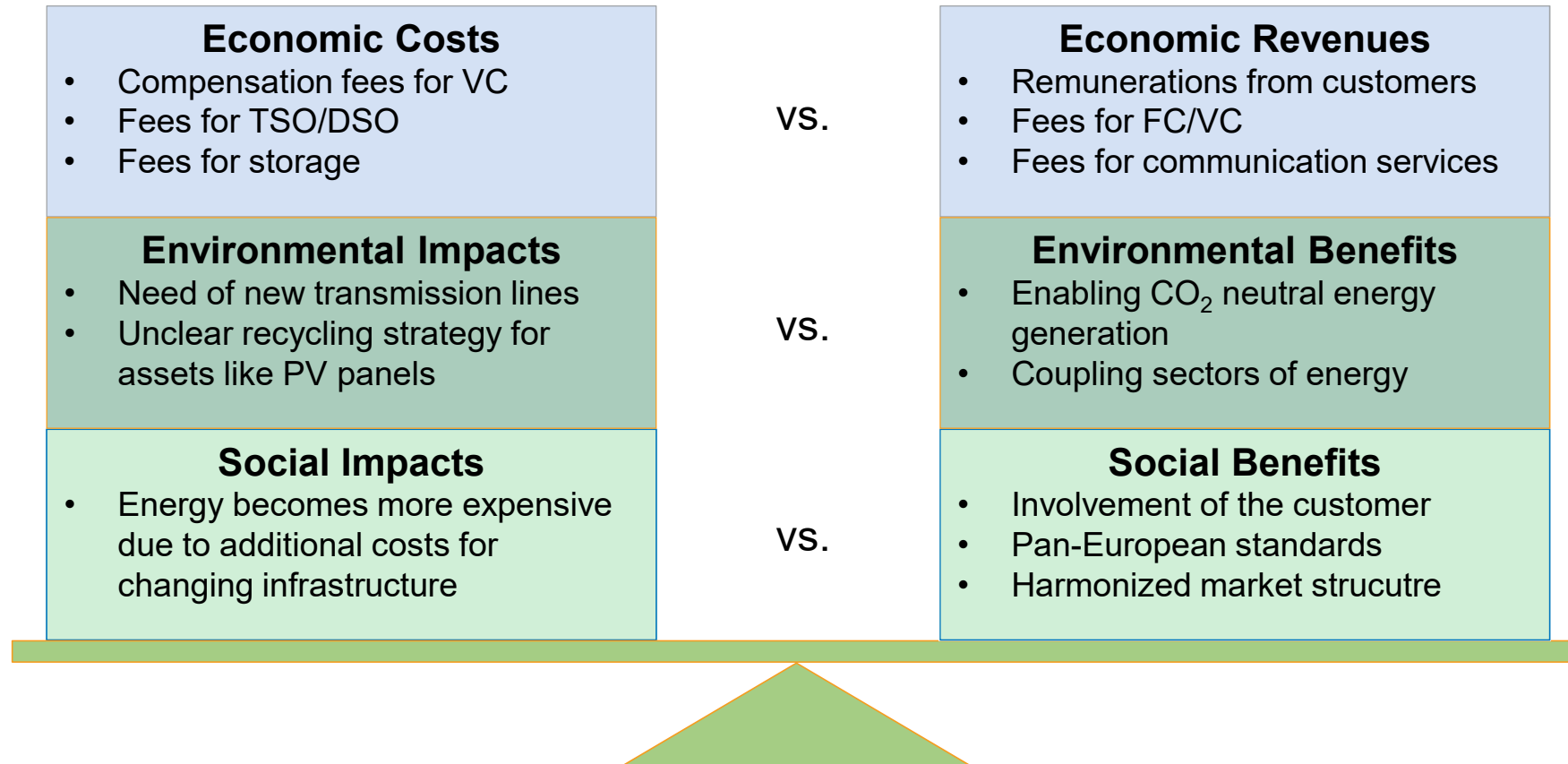
MONETARY STREAMS UP TO 100% RES



- Revenue streams:**
- 1) Remuneration from customers
 - 2) Remuneration from prosumers
 - 3) Fees for FC
 - 4) Fees for VC

- Cost structure:**
- 5) Remuneration for prosumers
 - 6) Compensation fees for VC
 - 7) Fees for TSO/DSO
 - 8) Remuneration for RES
 - 9) Fees for storage

INVESTIGATIONS ON CSR IMPACT



RESERVE from CSR Perspective

Impact of RESERVE

Sustainability and CSR

Work to be Done

OBJECTIVES AND ACHIEVEMENTS (WP 6) - 1



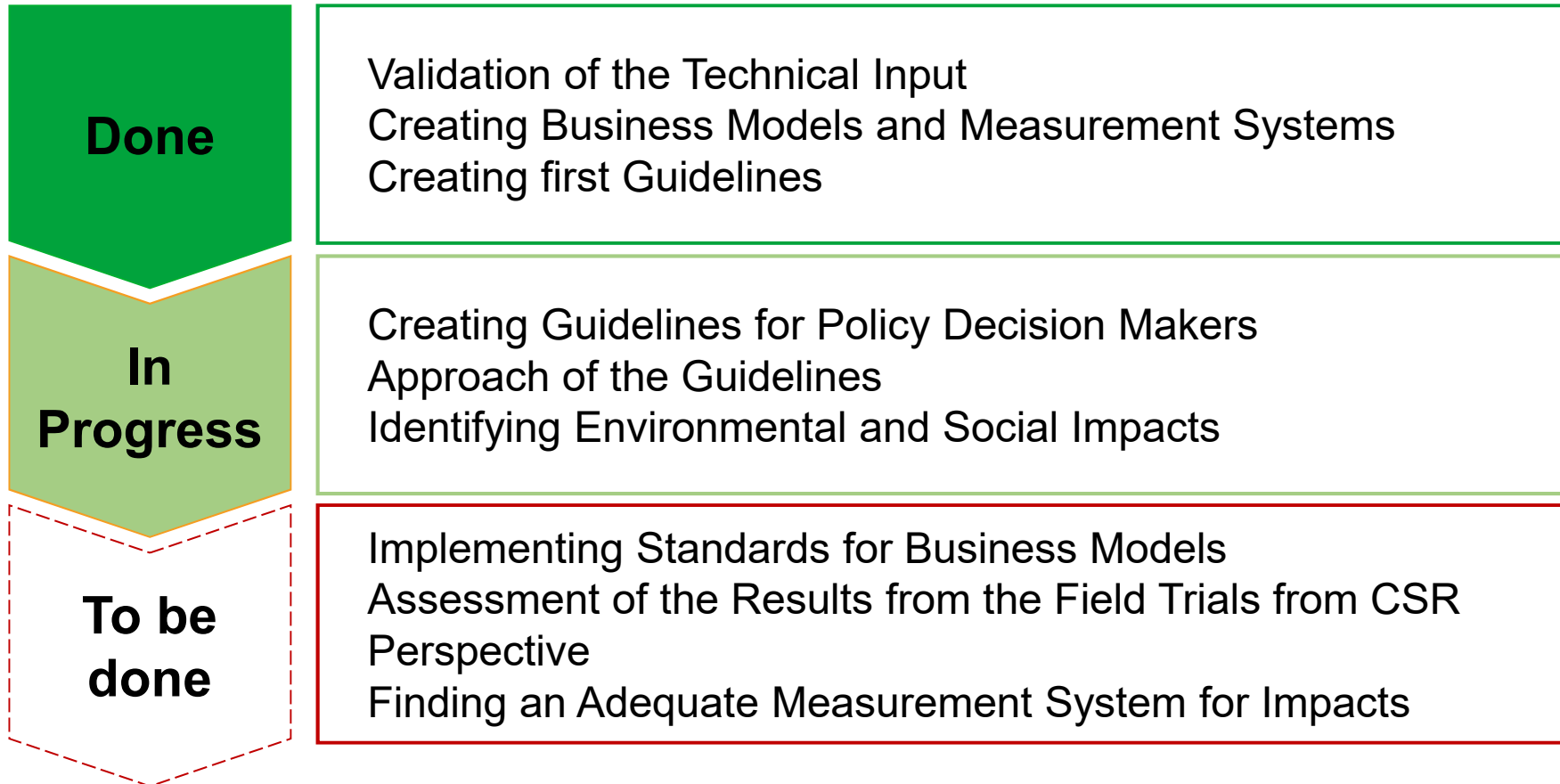
Objectives	Summary of achievements
<p>To finalize the set of harmonized network codes, based on draft inputs from the theoretical analyses developed in the project and tested in the field trial and promote their adoption internationally.</p>	<p>Developed the methodology for assessing the potential changes to the regulatory framework and identifying the top 5 proposals (new NCs or necessary updates on existing NCs) for voltage and frequency control, considering up to 100% RES scenario, in a total set of 19 proposals for network code changes and 1 proposal for a new network code.</p>
<p>To propose a set of key regulatory principles, referred to as “options”, to be considered when determining the appropriate governance framework for the future electricity transmission networks (beyond 2040)</p>	<p>Defined a set of 5 key regulatory principles referred as “options” to be considered when determining the appropriate governance framework for the future power system: efficiency of the investments and costs, harmonization among the power sector members, transparency and predictability, priority and continuity.</p>
<p>To develop a policy roadmap for the intermediate period in order to implement the option by 2050</p>	<p>Established the main milestones for the development and implementation of the plan to adopt the top 5 proposals internationally. Started the process of information of the authorities regarding the necessity for NC upgrades. Organized a workshop on Network Codes</p>

OBJECTIVES AND ACHIEVEMENTS (WP 6) - 2



Objectives	Summary of achievements
To investigate the sustainability of business models for renewable energy	Developed CSR guidelines for the development of business models and energy system designs. Identified the changes in market structure and revenue streams according to the technical achievements in RESERVE. Organized 2 CSR workshops.
Contribute, upon investigation by the INEA, to common information and dissemination activities to increase the visibility and synergies between H2020 supported actions	Disseminated and exploited the project results by constantly participating to the EU BRIDGE initiative meetings and several international meetings and events

RESERVE IN SECOND HALF



Thank you for your attention!





www.re-serve.eu



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