


The European Green Deal: what role for energy research?

SUPEERA Webinar
24 April 2020, 11:00-12:00 CET



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 949125

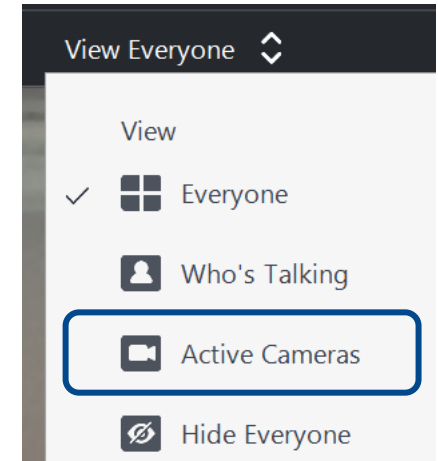


Ivan Matejak

SUPEERA Project Coordinator,
European Energy Research Alliance



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SUPEERA supports the SET-Plan and the Clean Energy Transition

We...

- Facilitate the coordination of the research community
- Accelerate innovation and uptake by industry
- Provide recommendations on policy
- Promote the SET-Plan and the Clean Energy Transition

We connect the dots.

Support to the coordination of national research and innovation programmes
in areas of activity of the European Energy Research Alliance





Support to the coordination of national research and innovation programmes
in areas of activity of the European Energy Research Alliance

Target: energy research community

Objectives:

- To **inform** about the latest EU climate and energy policies and how these can be concretely translated into R&I challenges for their direct application
- To **support the implementation** of new EU policies by advancing research in related fields of actions
- To **encourage the engagement of the research community** to share science-based recommendations when expertise is already available



The European Green Deal: what role for energy research?

AGENDA

Welcome and introduction to the
SUPEERA Webinar series

Ivan Matejak
SUPEERA Project Coordinator, EERA

The European Green Deal:
what role for Research & Innovation?

Matthijs Soede
Research Policy Officer, DG Research & Innovation,
European Commission

Supplying clean, affordable and secure energy:
Commission priorities for the European Green Deal

Alessia Clocchiatti
Policy Officer, DG Energy, European Commission

Translating European climate priorities into action –
Research and Innovation challenges for the research
community

Petter Støa
Vice President Research, SINTEF Energy

Q&A and closing

Moderated by Ivan Matejak

Registered participants coming from:



Matthijs Soede

Research Policy Officer, DG Research & Innovation, European Commission





The European Green Deal and Research & Innovation as a Driver for Change

von der Leyen Commission

#EUGreenDeal

Research and
Innovation



”

*The European Green Deal is Europe's
Man on the Moon Moment*

#EUGreenDeal



European
Commission

- The European Green Deal a commitment for the European Union to become world's first climate-neutral continent



This “involves taking decisive action now. We will need to invest in innovation and research, redesign our economy and update our industrial policy”.

“For the generation of my children, Europe is a unique aspiration. [...] To match this aspiration with action, we must rediscover our unity and inner strength.” [...] “We will be a world leader in circular economy and clean technologies.”



Mobilising Research & Fostering Innovation

Designing a set of deeply transformative policies

Mainstreaming sustainability in all EU policies

Transforming the EU's economy for a sustainable future

Increasing the EU's Climate ambition for 2030 and 2050

A zero pollution ambition for a toxic-free environment

Supplying clean, affordable and secure energy

Preserving and restoring ecosystems and biodiversity

Mobilising industry for a clean and circular economy

From 'Farm to Fork': a fair, healthy and environmentally friendly food system

Building and renovating in an energy and resource efficient way

Accelerating the shift to sustainable and smart mobility

And leaving no one behind

Financing the transition

Leave no one behind (Just Transition)

The European Green Deal

The EU as a global leader

A European Climate Pact

Designing a set of
deeply
transformative
policies



CLIMATE PACT & CLIMATE LAW

- European '**Climate Law**' enshrining the 2050 climate neutrality objective into legislation
- Plan to increase the EU's **2030 climate target** to **at least 50%** and **toward 55%** in a responsible way by **October 2020** (Key targets for **2030**: At least 40% cuts in greenhouse gas **emissions** (from 1990 levels) At least 32% share for renewable energy. At least 32.5% improvement in energy efficiency.)
- **Revise all relevant legislative measures** to deliver on this increased ambition by June 2021
- Proposal for a revision of the **Energy Taxation Directive** by June 2021
- Possible **carbon border adjustment mechanism** by 2021
- A new **EU Strategy on Adaptation** in 2020/2021
- Launch of the **European Climate Pact**
- Proposal for an **8th Environmental Action Programme** in 2020



PROMOTING CLEAN ENERGY

- Assess the ambition of the final **National Energy and Climate Plans** by June 2020
- Strategy for **smart sector integration** in 2020
- **Offshore renewables** initiative in 2020
- Review the **TEN-E Regulation**
- Revise the **Renewable Energy and Energy Efficiency Directive** by June 2021



MAKING HOMES ENERGY EFFICIENT

- **‘Renovation wave’** for the building sector in 2020
- Revise the **Renewable Energy and Energy Efficiency Directive** by June 2021

STRIVING FOR GREENER INDUSTRY

- **EU Industrial Strategy**
- A new **circular economy action plan**, including a **sustainable products policy**
- **Clean Steel breakthrough**: proposal in 2020 to support zero carbon steel-making processes by 2030
- Legislation in support of the **Strategic Action Plan on Batteries** and the circular economy in 2020
- Propose legislative reforms **tackling waste**



| SMARTER, MORE SUSTAINABLE TRANSPORT

- Strategy for **Sustainable and smart mobility in 2020**
- Revise **the CO₂ emissions performance legislation** for light duty vehicles by June 2021
- **Extend EU's Emission Trading** to the maritime sector, and to reduce the free allowances for airlines by June 2021
- Support **public charging points: 1 million by 2025**
- Boost the production and supply of **sustainable alternative fuels** for the different transport modes
- Review the **Alternative Fuels Infrastructure Directive** and the TEN-T Regulation in 2021
- More **stringent air pollution emissions standards** for combustion-engine vehicles



| FROM FARM TO FORK

- **Farm to Fork Strategy** in spring 2020
- Measures to significantly **reduce** the use of **chemical pesticides, fertilisers and antibiotics**
- Examination of the **draft national strategic plans**, to meet the ambitions of the European Green Deal and the Farm to Fork Strategy in 2020/2021



PROTECTING NATURE

- **EU Biodiversity Strategy** for 2030 in spring 2020
- Follow up with concrete measures in 2021 to **address the main drivers of biodiversity loss**
- A new **EU Forest Strategy** in 2020
- Measures to support **deforestation-free value chains** from 2020
- EU to continue leading the **international climate and biodiversity negotiations**, further strengthening the international policy framework

ELIMINATING POLLUTION

- **Zero pollution action plan** for air, water and soil in 2021
- Address **industrial pollution** from large industrial installations in 2021
- **Chemicals strategy for sustainability** in summer 2020

FINANCING GREEN PROJECTS

- A **European Green Deal Investment Plan** (€1 trillion) and a **Just transition Mechanism** (€100 billion) in January 2020
- **25% target for climate mainstreaming** across all EU programmes within the proposed MFF 2021-2027
- **Propose new revenue streams** and review the ETS Innovation and Modernisation funds to deploy carbon neutral solutions
- **Mobilisation of InvestEU** support of the Green Deal objectives; work with the **EIB and other financial institutions**
- Renewed **Sustainable Finance Strategy** in Autumn 2020; **taxonomy**, corporate governance framework
- Review of **Non-Financial Reporting** Directive; support **natural capital accounting**
- **Labels for retail financial investment products**
- Developing **EU green bond standard**; integration of environmental risks in **EU prudential framework**



ENSURING A JUST TRANSITION FOR ALL

- **Just transition mechanism** will ensure Europe moves away from fossil fuels **without leaving anyone behind** by:
 - Providing tailored **financial and practical support** to help **workers**
 - Generate the **necessary investments** in the regions **most affected by the transition**
 - Making investments more attractive, with an **overall financial package of at least €100 billion**



LEADING THE GREEN CHANGE GLOBALLY

- EU to continue **leading the international climate and biodiversity negotiations**, further strengthening the international policy framework
- Strengthen the **EU's Green Deal Diplomacy** in cooperation with Member States
- **Green Agenda** for the Western Balkans
- Proposal to make the **respect of the Paris Agreement an essential element** for all future comprehensive trade agreements



TIMELINE OF EGD ACTIONS (1Q 2020)



Home / News / Energy & Environment / European Green Deal / LEAKED: Full list of delayed European Green Deal initiatives

LEAKED: Full list of delayed European Green Deal initiatives

By Frédéric Simon | EURACTIV.com

📅 16 avr. 2020 (updated: 📅 22 avr. 2020)



European Commission President-elect Ursula von der Leyen (L) and Commission First Vice-President Frans Timmermans (R) take their seats before a vote by Members of the European Parliament on her college of commissioners, in Strasbourg, France, 27 November 2019. [EPA-EFE/PATRICK SEEGER]

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Research & Innovation and the Green Deal

| MOBILISING RESEARCH AND FOSTERING INNOVATION

- At least **35% of Horizon Europe funding** for climate solutions
- Horizon 2020 **Green Deal Call**
- Four '**Green Deal missions**' (climate adaptation, oceans, cities and soil)
- **Several European Partnerships** with industry and Member States
- **European Institute of Innovation and Technology** support to young researchers and innovators
- **European Innovation Council** focused on radically new, breakthrough products, services and processes
- **Data and digital infrastructure** in support of the ecological transition

HORIZON 2020 GREEN DEAL CALL

- **New Green Deal Call under Horizon 2020**
- Part of the **European Green Deal Investment Plan** mobilising at least **€1 trillion** of public and private investments
- Major **cross-cutting** call to provide **innovative solutions**, demonstrate **tangible results** and reassure citizens that **action is underway**

HORIZON EUROPE'S EUROPEAN PARTNERSHIPS

- A new wave of research and innovation **European Partnerships**, including:
 - Clean **Steel, Circular & Bio-based** Europe
 - Clean **Hydrogen, Clean Energy Transition, Batteries**
 - Clean **Aviation**, Zero-Emission **Waterborne** Transport & Zero-Emission **Road** Transport
 - Sustainable & Safe **Food System**, Environmental Observation for **Sustainable Agriculture**
 - **Rescuing Biodiversity** to Safeguard Life on Earth
 - Climate Neutral **Blue Economy, Water for All**

HORIZON EUROPE GREEN DEAL MISSIONS

- The Missions aim to produce **European public goods at a grand scale**
- Provide excellent platforms for **citizens to actively participate** in the Green Deal, being potential testbeds for the Climate Pact
- They catalyse action, deliver impact and **capture the public's imagination**



Climate-neutral and smart cities



Adaptation to climate change, including societal transformation



Soil health and food



Healthy oceans, seas, coastal and inland waters

THE ROLE OF R&I POLICY IN THE EGD

- As a **key enabler** of the various transitions called for by the European Green Deal, research and innovation can **drive, navigate and accelerate the enormous Green Deal transformation**



H2020 Green Deal Call

The **European Green Deal Call**

Introductory remarks

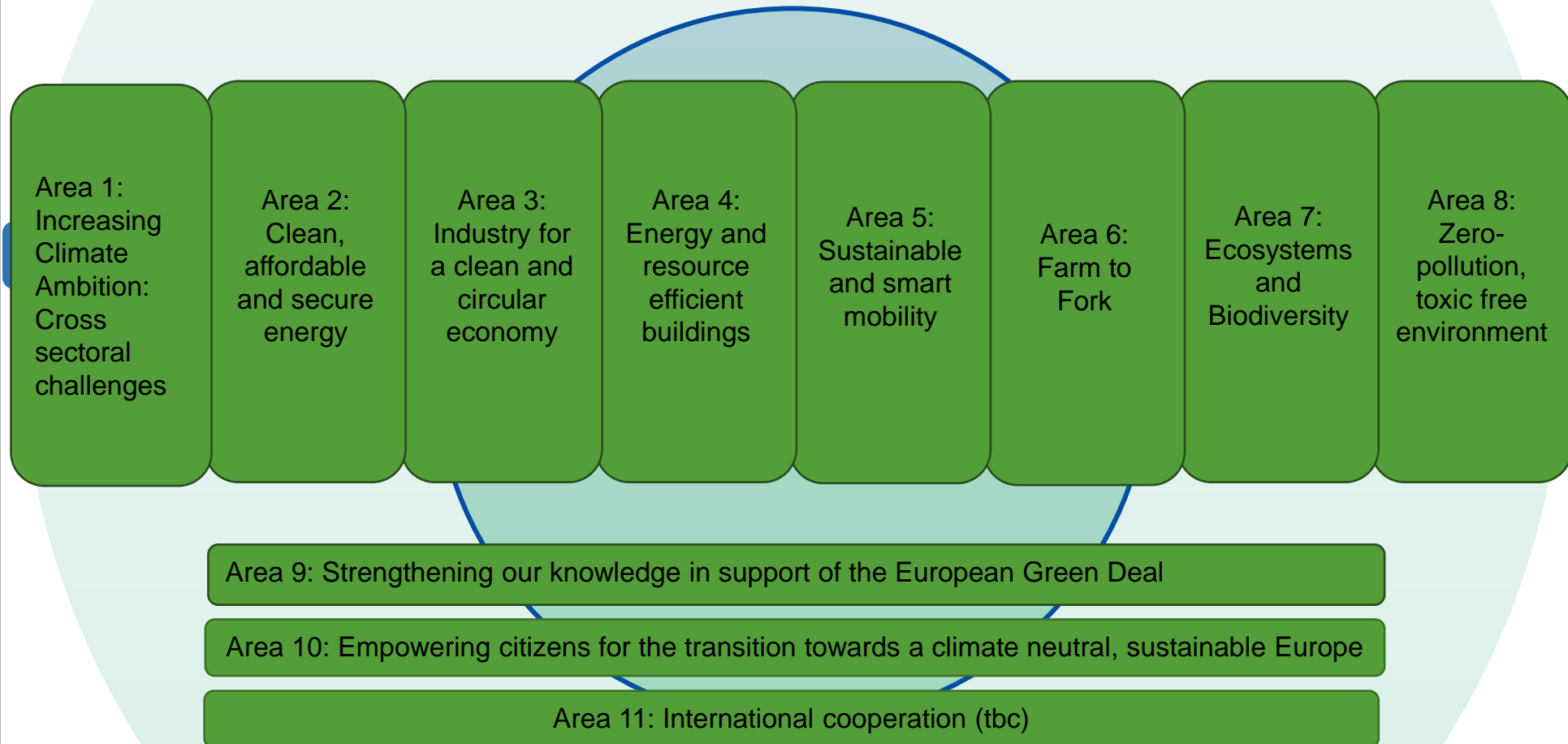
Please note that the information provided does not take account of the comments / contributions provided by the delegations to the overall working document on the Green Deal call.

The next iteration in the development of the call will be based on first draft texts for the topics.

Please bear in mind that this list of topics is only tentative, not binding and can be modified in the course of consultation with the member states and with external stakeholders.

The European Green Deal Call

MAIN PART OF THE CALL FOCUSING ON INNOVATIVE SOLUTIONS AND DEMONSTRATIONS



The European Green Deal Call

<p>Area 1: Increasing Climate Ambition: Cross sectoral challenges</p>	<ul style="list-style-type: none">- Preventing and Fighting Wildfires- Towards climate –neutral and socially innovative cities- Demonstrating innovative solutions for resilience of regions to climate change
<p>Area 2: Clean, affordable and secure energy</p>	<ul style="list-style-type: none">- Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies and their integration into the energy system.- Develop an demonstrate a 100 MW electrolyser upscaling the link between renewables and industrial applications
<p>Area 3: Industry for a clean and circular economy</p>	<ul style="list-style-type: none">- Closing the carbon cycle to combat climate change: renewable energy driven reduction of Co2 using innovative catalytic materials and technologies- Demonstration of systemic solutions for the territorial development of circular economy

The European Green Deal Call

Area 4: Energy and resource efficient buildings	-Zero emissions built environment – building and renovating in an energy and resource efficient way
Area 5: Sustainable and smart mobility	-Green ports and airports: green aviation and shipping
Area 6: Farm to Fork	-Testing and demonstrating high impact innovations to address food system challenges in a place-based context.
Area 7: Ecosystems and Biodiversity	-Restoring biodiversity and ecosystem services
Area 8: Zero-pollution, toxic free environment	-Mitigating the effects of persistent and mobile chemicals -Towards innovative regulation of chemical and pharmaceutical mixtures:

The European Green Deal Call

<p>Area 9: Strengthening our knowledge in support of the EGD</p>	<ul style="list-style-type: none">- Reinforced R&I capacities and services to address European Green Deal challenges- Developing end-user products and services for all stakeholders and citizens, supporting climate adaptation and mitigation- Towards a transparent & accessible ocean (a Digital Twin of the Ocean)
<p>Area 10: Empowering citizens for the transition towards a climate neutral, sustainable Europe</p>	<ul style="list-style-type: none">- European capacities for citizen deliberation and behavioural change for the Green Deal- Empowering citizens to act on climate change through education, monitoring of their environmental impacts, and civic involvement
<p>Area 11: International cooperation</p>	<ul style="list-style-type: none">- Accelerating demonstration of clean energy solutions in Africa and the Mediterranean

The European Green Deal Call

Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies and their integration into the energy system.

European
Commission

To decarbonise Europe, clean renewable power production must become the main source of energy. A Clean planet for all, provides estimates for the offshore wind capacity in Europe of 240-440 GW by 2050. This increase would represent a paradigm shift in the European energy system and require a modern infrastructure to transport offshore renewable energy power to onshore, including through the option of power-to-X. This buildout needs to be attained while also protecting the environment and biodiversity and securing a just transition, all while ensuring cost-efficiency. There is a need for more efficient and cost-effective technologies using wind, wave and/or tidal resources, considering the potential of the different European sea basins.

Targeted Impacts:

- To accelerate the development of innovative critical offshore technologies for the realization of a clean renewable power production system needed to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050.
- To accelerate the future roll-out of large-scale deployment of offshore renewable energy, considering market perspective and social, environmental and economic impacts.
- To increase incentives for investment and economies of scale in offshore bringing down costs and it will create new business models and services



European
Commission

The European Green Deal Call

Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies and their integration into the energy system.

Proposed activities:

Demonstration of critical offshore renewable energy innovations at sea considering the efficiency, reliability and sustainability that is needed in all areas of the offshore renewable energy system notably:

-**Offshore renewable energy power generating systems**: innovative large scale integrated systems, floaters and substructures, mooring and anchoring systems specifically conceived for floating offshore considering the varied subsea conditions for floating offshore systems.

-**Grid infrastructure**: demonstration of innovative High Voltage Direct Current (HVDC) technologies and systems (like multi-vendor Multi Terminal HVDC (MT HVDC) systems, grid forming converter, and DC circuit Breaker); for floating renewable energy technologies innovative dynamic inter-device/inter-array cables and connections to converter stations at sea or offshore hubs have to be considered.

-**Power to X /storage systems**: innovative storage and/or green power to X (including hydrogen) systems to maximise the use of offshore resources.

It shall address at least the offshore renewable energy power generating systems and the related energy system integration requirements, and may address grid infrastructure and/or power to X/storage systems.

Proposals shall address marine spatial planning (making multi-use of the seas possible), industrial design and manufacturing processes, installation methods, transport and operation & maintenance and supply chains.



THANK YOU

Contact: ines.prates@ec.europa.eu

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Alessia Clocchiatti

Policy Officer, DG Energy
European Commission



Supplying clean, affordable and
secure energy – Commission
priorities for a **European Green Deal**

SUPEERA Webinar
24 April 2020

Alessia Clocchiatti – DG ENER
Unit C2 – Innovation, clean technologies and competitiveness

A step-change in climate ambition

Increasing the EU's Climate ambition
for 2030 and 2050

- European '**Climate Law**' enshrining the 2050 climate neutrality objective in legislation (Proposed 4 March 2020)
- **Impact-assessed plan** to increase the EU's climate target for 2030 to at least 50% and towards 55% in a responsible way by September 2020
- **Carbon border adjustment mechanism** for selected sectors by 2021.
- A new EU **Strategy on Adaptation** in 2020/2021

The EU as a
global leader

Designing a set of
deeply transformative policies

A European
Climate Pact

The European Green Deal

Supplying clean, affordable
and secure energy

Building and renovating in an energy
and resource efficient way

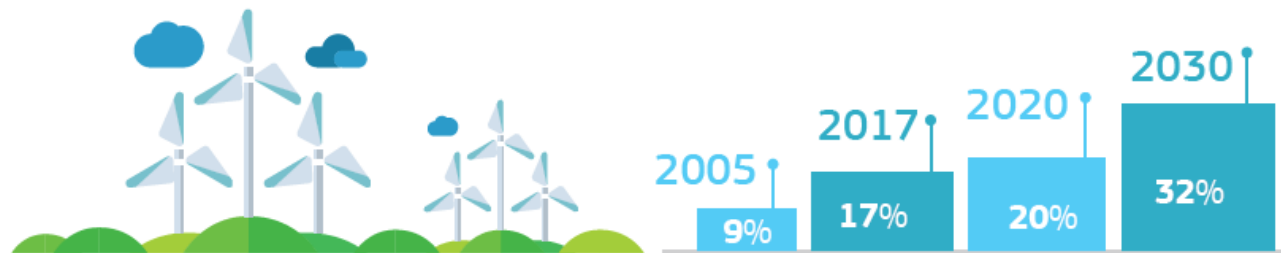
- Assess the ambition of the final **National Energy and Climate Plans**
- **Smart sector integration** strategy Q2/2020
- **Renovation wave** for the building sector Q3/2020 doubling the renovation rate
- **Offshore renewable energy** initiative Q4/2020
- Review the **TEN-E Regulation** (REFIT; in 2020)
- Review and revise, where needed, the **Renewable Energy and Energy Efficiency Directive** by June 2021

The EU as a
global leader

A European
Climate Pact

Opportunities

THE RENEWABLE ENERGY REVOLUTION



EU's energy import dependence will be massively reduced by 2050.



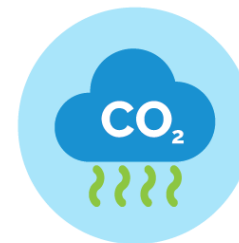
THE CIRCULAR ECONOMY, A WIN-WIN SITUATION:



Savings of **€600 BILLION** for EU businesses, equivalent to 8% of their annual turnover

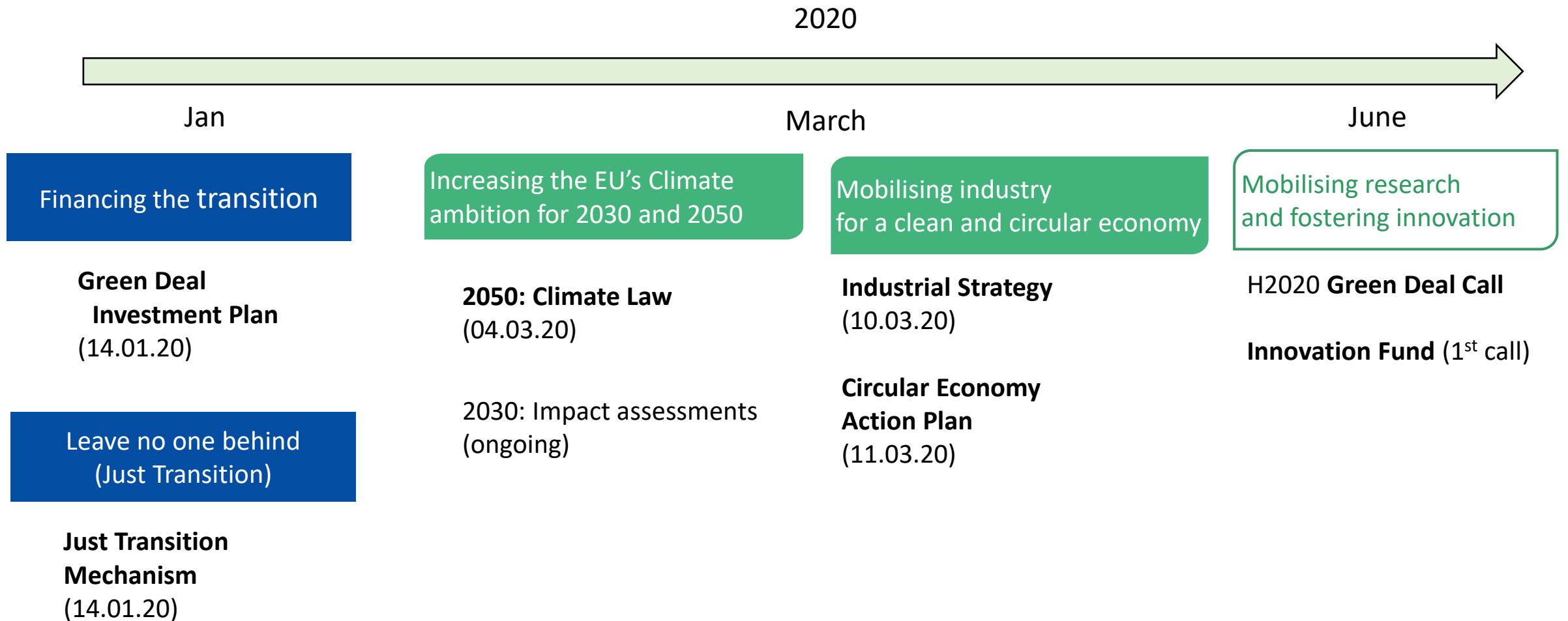


Creation of **580,000 JOBS**



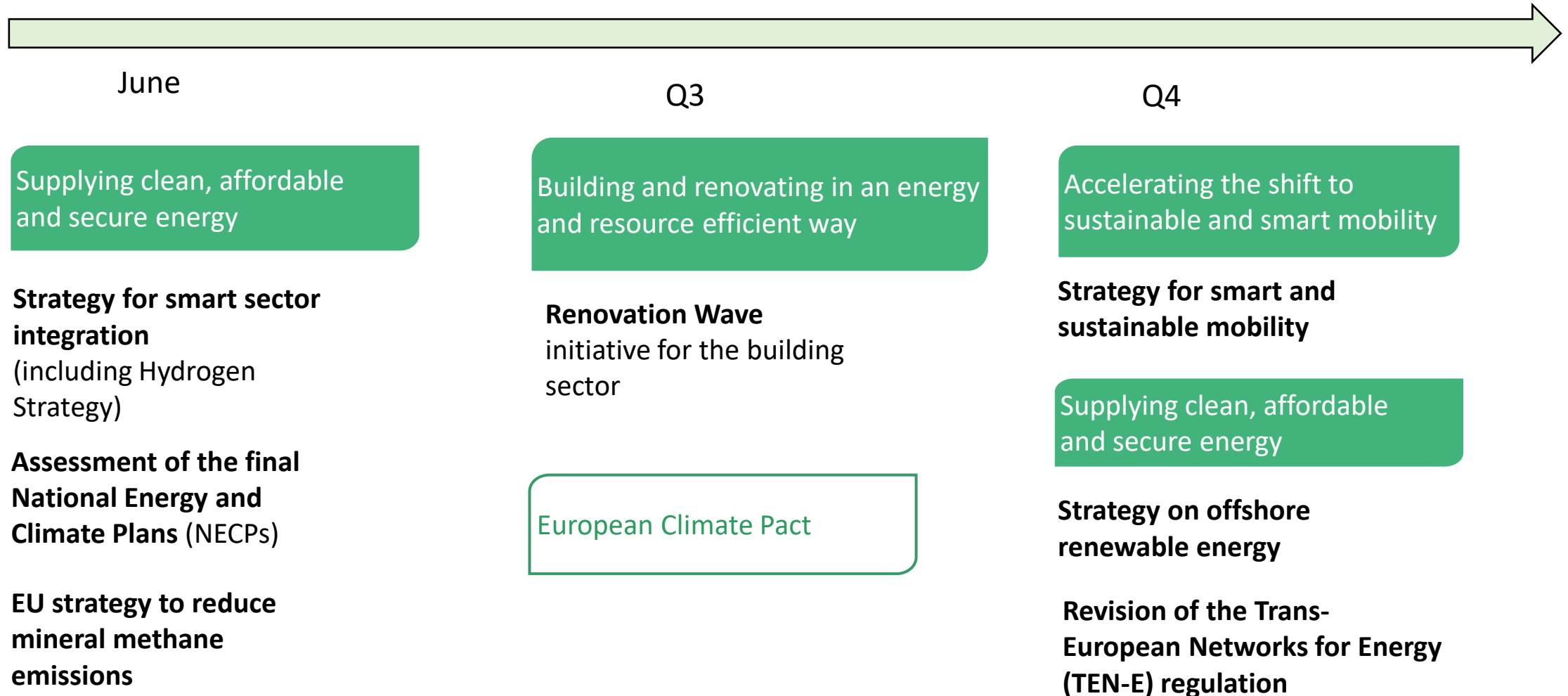
Reduction of EU carbon emissions by **450 MILLION TONNES** by 2030

Green Deal Timeline for the energy sector



Green Deal Timeline for the energy sector

2020





Smart sector integration

- Creating **stronger links** between the electricity, gas, buildings, transport, agriculture and industry.
- About **optimizing our energy system** as a whole.
- Make our energy system work as efficiently and as smartly as possible to reach climate neutrality -> **limit cost** of the energy transition for citizens and businesses.
- **Public consultation** until 15 May



Offshore renewable strategy

- Instrumental in building a **power system largely based on renewable energy**.
- Strategy will investigate the **potential** of offshore renewable energy.
- Strategic way forward for **ambitious deployment and integration** into the grid by 2030 and 2050.
- Build upon **regional cooperation**, such as in the 'North Seas Energy Cooperation'.
- **Opportunities and challenges**: impacts on energy grids and markets, smart sector integration, management of maritime space, industrial policy.
- Adoption of the Communication is expected for Q4/2020.



Renovation Wave

- Creating a **platform** to bring together buildings and construction sector, architects and engineers and local authorities to address the barriers to renovation
- Fostering **policies and financial measures** to boost building renovation rates
- Scaling up the role of the **private sector, industries**
- **Smart technologies** for transforming today's buildings into the buildings of the future
- **Public consultation** open until 23 June 2020

NECPs and the European Green Deal

NECPs are the foundation for delivering the European Green Deal.

- Full and timely **implementation** of the ‘Clean Energy for All Europeans’ legislation.
- NECPs are key to **deliver on the Energy Union objectives**, including 2030 energy and climate targets.
- NECPs ensure investment certainty, consistent application of EU legislation and thus **cost-effective targets achievement**.
- NECPs and related follow-up are crucial to enhance **political dialogue** between MS and EU institutions but also across MS.

State of play

So far:

- **23** MS have submitted their final **NECP**;
- **15** MS have submitted their national **LTS**

How can the Green Deal help? Energy side

- The Commission will **assess** the ambition the **final National Energy and Climate Plans** by June 2020, but publication after the summer
- Review and revise where needed the **Renewable Energy** and **Energy Efficiency** Directive by June 2021.
- **Offshore wind** initiative in 2020.
- Review the **TEN-E** Regulation.
- **Renovation wave** for the building sector in 2020 **doubling the renovation rate**.
- **Comprehensive plan** to increase the EU's climate target for 2030 to at least 50% and towards 55% in a responsible way by summer 2020.
- **Review and revise where needed all relevant legislative measures to deliver on this increased ambition** by June 2021.

How can the Green Deal help R&I side

- **Better alignment** of research programmes and energy policies & objectives
- Research policy to serve the achievement of the **energy and climate targets**
- Stronger link to **competitiveness**
- Better coordination of MS through **SET Plan and co-funded partnerships**
 - >> most MS didn't make the link to their SET Plan activities and budget
- Strengthen **regional & international cooperation** through initiatives as Clean Energy Ministerial and Mission Innovation

Evidence based analysis of R&I priorities

- For reaching **Green Deal objectives**, increased expectations are set on clean technologies
- **Evidence-based methodology** linking the technology expectations from the 2050 Long-term strategy to the analysis on competitiveness
- **Technology status & value chain** analysis per technology & comparison with the rest of the **world**
- Involves both **modelling/forecasting and back casting**
- **Provide guidance to investment choices**, including on Horizon Europe
- **Upcoming consultation** with stakeholders, your input would be appreciated

Thank you!

Any question, just get in
touch 😊

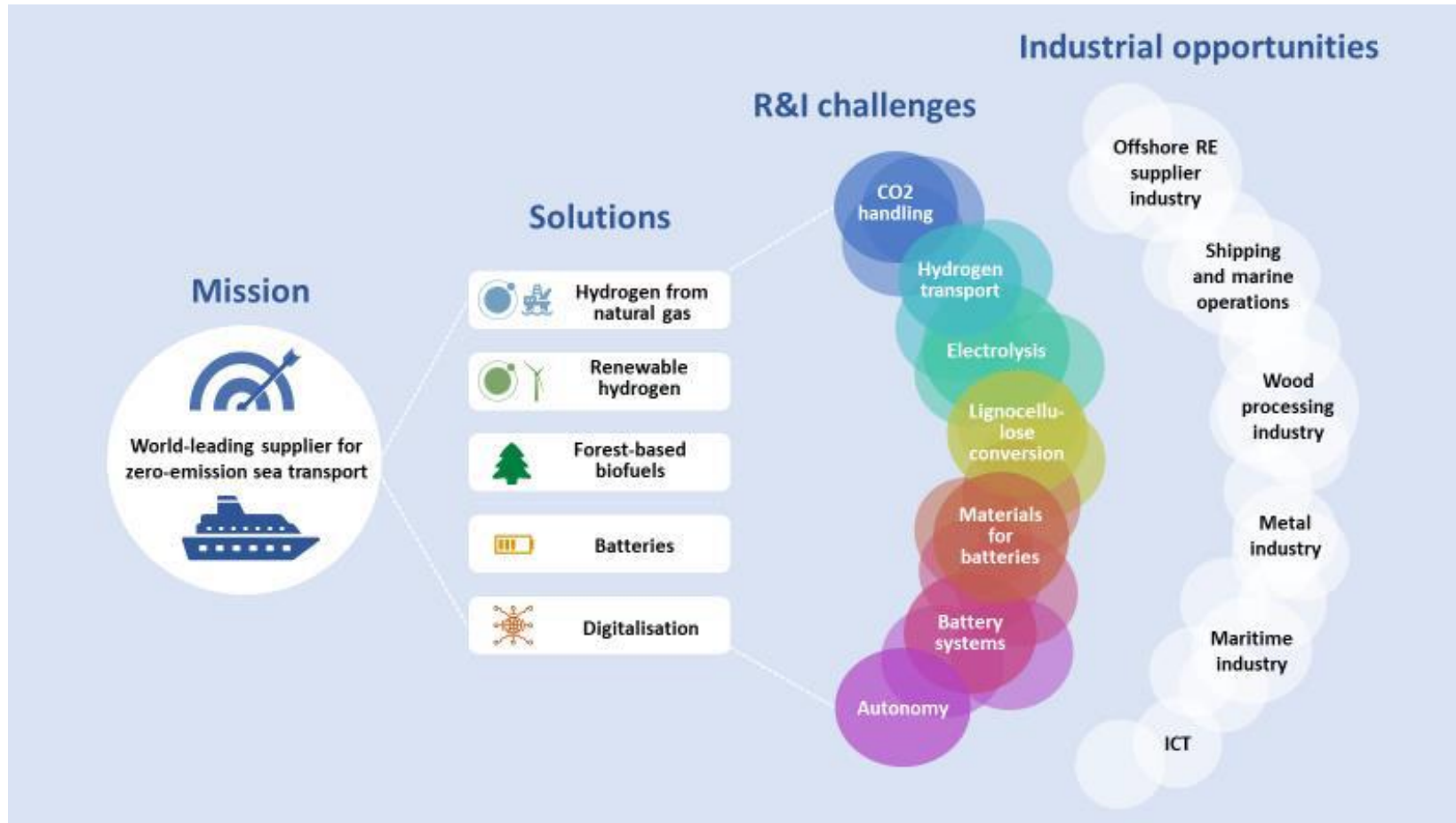
Petter Støa

Vice President Research
SINTEF Energy

Translating European climate priorities into action –
R&I challenges for the research community



Translating new EU policies into concrete actions for the EERA and SET-Plan community



PROPOSED STRUCTURE FOR THE GREEN DEAL CALL

GREEN DEAL CALL

MAIN PART OF THE CALL FOCUSING ON INNOVATIVE SOLUTIONS AND DEMONSTRATIONS

Area 1:
Increasing
Climate
Ambition:
Cross
sectoral
challenges

Area 2:
Clean,
affordable
and
secure
energy

Area 3:
Industry
for a clean
and
circular
economy

Area 4:
Energy and
resource
efficient
buildings

Area 5:
Sustainable
and smart
mobility

Area 6:
Farm to
Fork

Area 7:
Ecosystems
and
Biodiversity

Area 8: Zero-
pollution,
toxic free
environment

Area 9: Strengthening our knowledge in support of the European Green Deal

Area 10: Empowering citizens for the transition towards a climate neutral, sustainable

Area 11: International cooperation (tbc)

European Green Deal

Communication (roadmap)

Annex

The European Green Deal

- Climate ambition
- Clean, affordable and secure energy
- Industrial strategy for clean and circular economy
- Sustainable and smart mobility
- Greening Agri "Farm to Fork"
- Preserving and protecting biodiversity
- Zero pollution and toxic free
- Sustainability in all EU policies
- EU as global leader
- Working together

R&I challenges

Industrial opportunity

European Green Deal



EGD Call structure



Cooperation

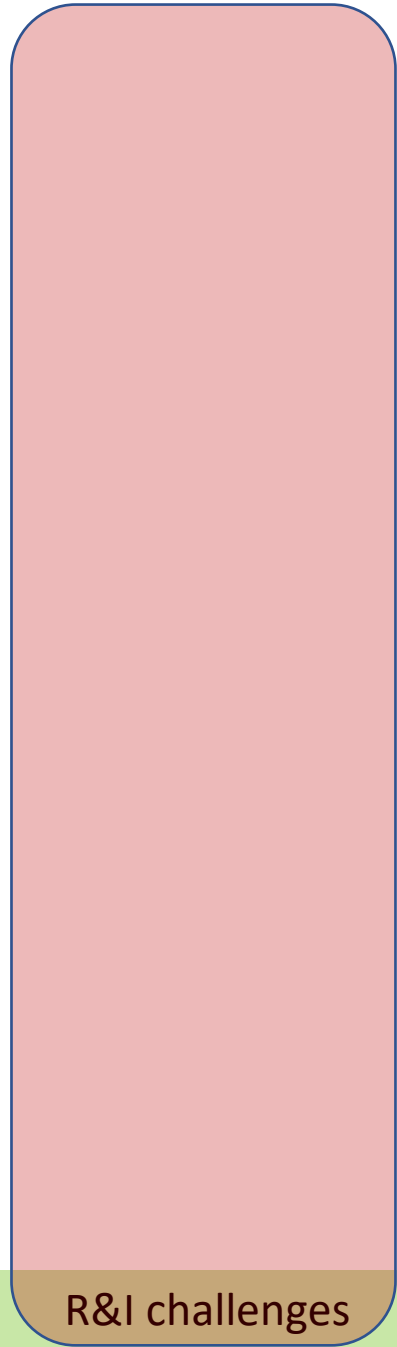
European Green Deal

EU GD Call



- 1: Increasing Climate Ambition: Cross sectoral challenges
- 2: Clean, affordable and secure energy
- 3: Industry for a clean and circular economy
- 4: Energy and resource efficient buildings
- 5: Sustainable and smart mobility
- 6: Greening Agri "Farm to Fork"
- 7: Ecosystems and Biodiversity
- 8: Zero pollution, toxic free environment
- 9: Strengthening our knowledge in support of the EGD
- 10: Empowering citizens for the transition towards a climate neutral, sustainable Europe
- 11: *International cooperation*

- Preventing and Fighting Wildfires
- Towards climate –neutral and socially innovative cities
- Demonstrating innovative solutions for resilience of regions to climate change
- Demonstration of innovative critical technologies to enable future large-scale deployment of offshore renewable energy technologies (with the possibility to address also hydrogen applications)
- Closing the carbon cycle to combat climate change
- Demonstration of systemic solutions for the territorial development of circular economy
- Zero emissions built environment
- Green ports and airports
- Testing and demonstrating high impact innovations to address food system challenges in a place-based context.
- Restoring ecosystems and biodiversity
- Mitigating the effects of persistent and mobile chemicals
- Towards innovative regulation of chemical and pharmaceutical mixtures



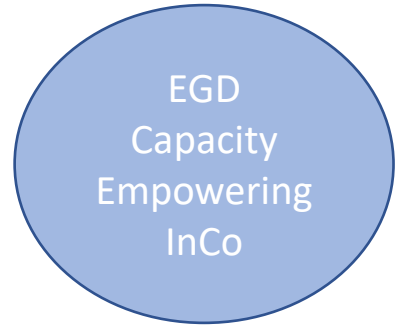
Areas 1-11

Topics

R&I challenges

European Green Deal

EU GD Call



1: Increasing Climate Ambition: Cross sectoral challenges

2: Clean, affordable and secure energy

3: Industry for a clean and circular economy

4: Energy and resource efficient buildings

5: Sustainable and smart mobility

6: Greening Agri "Farm to Fork"

7: Ecosystems and Biodiversity

8: Zero pollution, toxic free environment

9: Strengthening our knowledge in support of the EGD

10: Empowering citizens for the transition towards a climate neutral, sustainable Europe

11: *International cooperation*

- Reinforced R&I capacities and services to address European Green Deal challenges
- Developing end-user products and services for all stakeholders and citizens, supporting climate adaptation and mitigation
- [Possible topic on: "towards transparent and accessible ocean" – tbc]

- European capacities for citizen deliberation and behavioural change for the Green Deal
- Empowering citizens to act on climate change through education, monitoring of their environmental impacts, and civic involvement

- [Possible topic with a focus on cooperation with Africa – tbc]

Areas 1-11

Topics

R&I challenges

Preliminary analysis selected policies

//

▶ EU Climate Law proposal

▶ Climate Law objectives:

- ▶ **Climate neutrality objective:** reaching a balance between **union-wide** emissions and removal of greenhouse gases (EU-wide, instead of each country's balance)
- ▶ A new proposal to be submitted by September 2020 (as part of the EU Green Deal) regarding the **revision of the 2030 target for GHG emissions reduction**, possibly from 40% to a 50-55% of 1990's levels.
- ▶ **Trajectory for achieving climate neutrality:**
 - ▶ designed by the EU-Commission to be reviewed every 6 months
- ▶ **Topics relevant to EERA** that the EC shall consider in establishing the trajectory (Art.3.3) are:
 - ▶ cost-effectiveness and economic efficiency;
 - ▶ Best available technology;
 - ▶ Energy efficiency, energy affordability and security of supply;
 - ▶ environmental effectiveness and progression over time;
 - ▶ a just and socially fair transition.

European Green Deal

Climate Law

The main purpose is to set up an EU wide legally binding documents setting the framing conditions for the transition from current state to zero emission 2050 goals. The suggestion here is to focus on R&I challenges related to the transition and focus on shaping (realizing) an optimal trajectory based on these. The implication and adaptation that needs to be done by close to all EU industries and governments is a far bigger and wider scoped, but will be pursued in other sections of the Green Deal structure.

Why:
Stable goal framework will de-risk investments by EU wide legally binding;
Targets, Process, Measures, Progress reporting

Achieve climate neutrality by 2050

Optimal trajectory to achieve climate neutrality

Systemic Transition

Cost and Economic efficiency, competitiveness

Just and socially fair transition

Fair cost/benefit sharing between MS

Environmental effects and concerns

Technology and infrastructure

Best available technology

Energy efficiency, affordability and security of supply

Systemic

Transition scenario modelling

- Optimal transition trajectory
- Just and fair cost benefit sharing; actors, sectors, MS
- Define, document progress KPIs

Develop related products and services

Renewable energy technologies
Production, Electrification, Hydrogen

Energy efficiency
Industry, Buildings, Behavior

Energy systems
Components, Control, Markets, Digitalisation, Customer involvement

Mission

Solutions

Trajectory requirements

R&I challenges/Industrial opportunities

European Green Deal

Industrial strategy for a clean and circular economy

EU Industrial Strategy

Three fundamentals: 1) Competition at home to stay competitive globally, work towards more global trade. 2) Climate neutrality a frame and 3) Digitalisation an enabler. Make it happen by pushing: EU single market, digitalisation, revision of state aid rules and IP regulation, global trade, multiple industry climate neutrality strategies, R&I, transition financing, and more! The initial EU Industry Strategy policy paper spans from strategic direction to specific actions like establishing a PPP on Batteries or 5G deployment.

Europe:

- Home of Industry
- Reflect our values

Green and Circular Industry

EU industrial strategy

- New R&I instruments
- PPP

EU industrial strategy

- Smart Sector Integration
- Clean Steel
- Sustainable Chemicals
- Trans European Networks
- Offshore Renewables
- Sustainable and smart mobility
- Built environment
- Carbon Border tax
- Circular Economy
- Batteries, textiles, electronics, raw materials
- Hydrogen
- Empowering consumers
- Skills education
- 5G networks
- Pharmaceuticals

Offshore Renewables:

- System integration
- Installation
- Operation and Maintenance
- Next Generation Technology
- Floating wind

Turbine, component production

Installation and Operation

Renewable energy production

Offshore transmission

- Control
- Components

Mission

Focused Topics

R&I challenges

Industrial opportunities

European Green Deal

Industrial strategy for a clean and circular economy

Circular Economy Action Plan

Green and Circular Industry

Circular economy

Outset: Circular economy is an integral and inseparable part of Climate Neutrality
Key policy issues: 1) Empowering Consumers and Public Buyers 2) Circularity is a Climate Neutrality prerequisite 3) Monitor progress 4) Engage R&I actors to push and ensure an efficient and fact-based transition

Strategy/policy

- Products Designed for Sustainability
- Circularity in Production Processes
- Write Circularity explicitly into economic regulations
- EU waste exports

Less Waste More Value

- Waste prevention
- Circular waste
- Toxic free life cycle
- Market for secondary raw materials

Key Product Value Chains

- Electronics and ICT
- Batteries and Vehicles
- Packaging
- Plastics
- Textiles
- Construction and buildings
- Food, water and nutrients

Batteries:

- Mining
- Materials
- Secondary use
- Recycling
- Production
- Safety
- Charging time/cycles

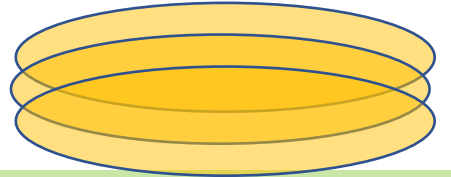
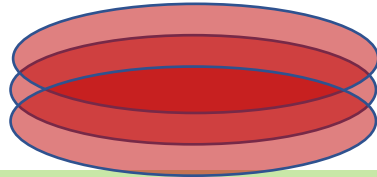
Rare Materials Mining

Large Scale Industrial Cell Production

Custom Packaging for Applications

Charging infrastructure

Recycling



Mission

Focused Topics

R&I challenges

Industrial opportunities

Dimensions



Technological research



Techno-economic research



Socio-technical energy transitions research



Environmental sustainability research

	Challenge Driven Transition Initiative
1	Robust and clean energy transition pathways
2	Decarbonized energy production
3	System reliability and flexibility
4	Smart, carbon-neutral cities & neighborhoods
5	Decarbonized transport*
6	Decarbonized industry
7	LULCF and agriculture*
8	Efficient and circular resources & energy flows

- Green Deal Policy papers just started coming
- Analyse to highlight thematic areas to identify R&I challenges
- Give an overarching view of Green Deal R&I needs
- Obviously many areas covered already by existing partnerships and member state SRIAs
- Communicate with Research Community to identify gaps and encourage wider and increased efforts to achieve goals

Q&A *Session*

Moderated by Ivan Matejak
SUPEERA Project Coordinator



Webinar follow-up

- Today's presentations and recording of the event will be made available online
- Please answer to a short (5 mins) satisfaction survey that will be sent shortly to all participants

To the next SUPEERA webinar!

THANK YOU!

