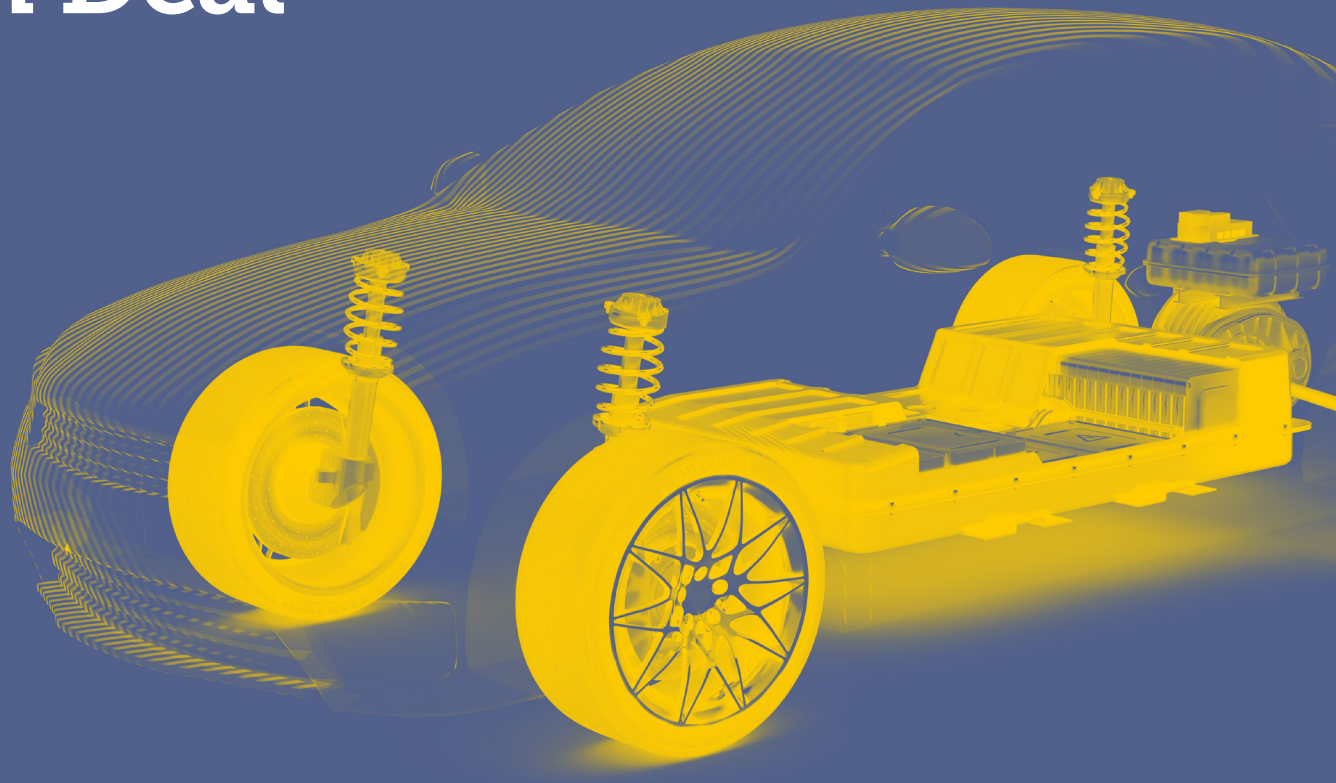
ELLEN MACARTHUR FOUNDATION

Unlocking opportunities through public-private collaboration: using the EU's Innovation Deal mechanism



Part of a series of case studies that exemplify elements of the Universal circular economy policy goals (2021) in practice.

Innovation and technological developments in today's market are fast paced. This can create a challenge for legislators needing to keep policies updated with developments to help ensure an enabling environment in which key innovations can scale. Creating a structured, two-way information flow promoting collaboration mechanisms between policymakers and companies can help to address this need. It can help to identify legislative barriers to innovation, opportunities to improve policy coherence, and foster solutions at the system level.

Innovation Deals are a novel, non-legislative mechanism where the public and private sector work together to address non-financial barriers to innovation. Inspired by the Green Deal approach in the Netherlands and France, they are one of the mechanisms used to stimulate innovation in line with the European Commission's 2015 *EU Action Plan for the Circular Economy*.[1] The Innovation Deals are a pilot scheme to help innovators with promising solutions to overcome potential regulatory barriers and bring their ideas to the market. They are voluntary cooperation agreements between the European institutions, innovators, and public authorities in which the partners aim to collaborate to gain an in-depth understanding of how an EU directive or regulation works in practice and whether it impedes innovation. The insights gathered from Innovation Deals can then contribute to a broader public consultation process. The European Commission selected two circular economy projects to trial the Innovation Deal mechanism.[2] One of these two projects was the "*From E-Mobility to recycling: the virtuous loop of the electric vehicle*" Innovation Deal.

A consortium seeking circular innovation opportunities for EV batteries

"*From E-Mobility to recycling: the virtuous loop of the electric vehicle*" brought together a consortium of eight partners from both the public and private sectors.[3] As France and the Netherlands are among the frontrunners in Europe in terms of their EV-fleet, the consortium involved French partners (Groupe Renault, Bouygues, the Ministry for the Ecological and Inclusive Transition, and the Ministry of Economy and Finance) and Dutch partners (LomboXnet, the Ministry of Infrastructure and Water Management, and the Ministry of Economic Affairs and Climate Policy, and the Province of Utrecht). From the European Commission side, the Directorate-General for Research and Innovation (DG RTD) led this project with support from the Directorate-General for the Environment (DG ENV), for Energy (DG ENER) and the Joint Research Center (JRC).

The consortium's focus was to identify perceived regulatory barriers to the reuse of batteries from electric vehicles. In their first use-cycle, electric vehicle (EV) batteries support the decarbonisation and reduction in harmful pollutants from the transport sector. Lithium-ion batteries, the most common type of EV batteries, are flexible and can be used for several purposes. Once EV batteries have reached their

SIGNING CEREMONY OF THE INNOVATION DEAL 'FROM E-MOBILITY TO RECYCLING: THE VIRTUOUS LOOP OF THE ELECTRIC VEHICLE', GROUP PHOTO IN PRESENCE OF JEAN-PHILIPPE HERMINE, CARLOS MOEDAS, DELPHINE GENY-STEPHANN, DANIEL CALLEJA CRESPO, (FROM LEFT TO RIGHT) IN THE 1ST ROW, AND ROBIN BERG, MONA KEIJZER, SERVAN LACIRE, AND HENRI KOOL, (FROM LEFT TO RIGHT, IN THE 2ND ROW). SOURCE: EUROPEAN COMMISSION

driving range storage capacity, they can be reused in numerous applications such as energy storage in the grid to smooth the intermittencies of photovoltaic or wind electricity production (among other benefits). Such second-use applications help to reduce the need to extract critical raw materials such as cobalt, lithium and nickel to produce new batteries for the grid, and avoid EV battery waste. These second-use applications also have the potential to partly offset the indirect CO_2 emissions associated with the production of EV batteries. By using EV batteries for multiple purposes and keeping their valuable materials in use, innovators can unlock circular opportunities throughout the various battery use cycles.

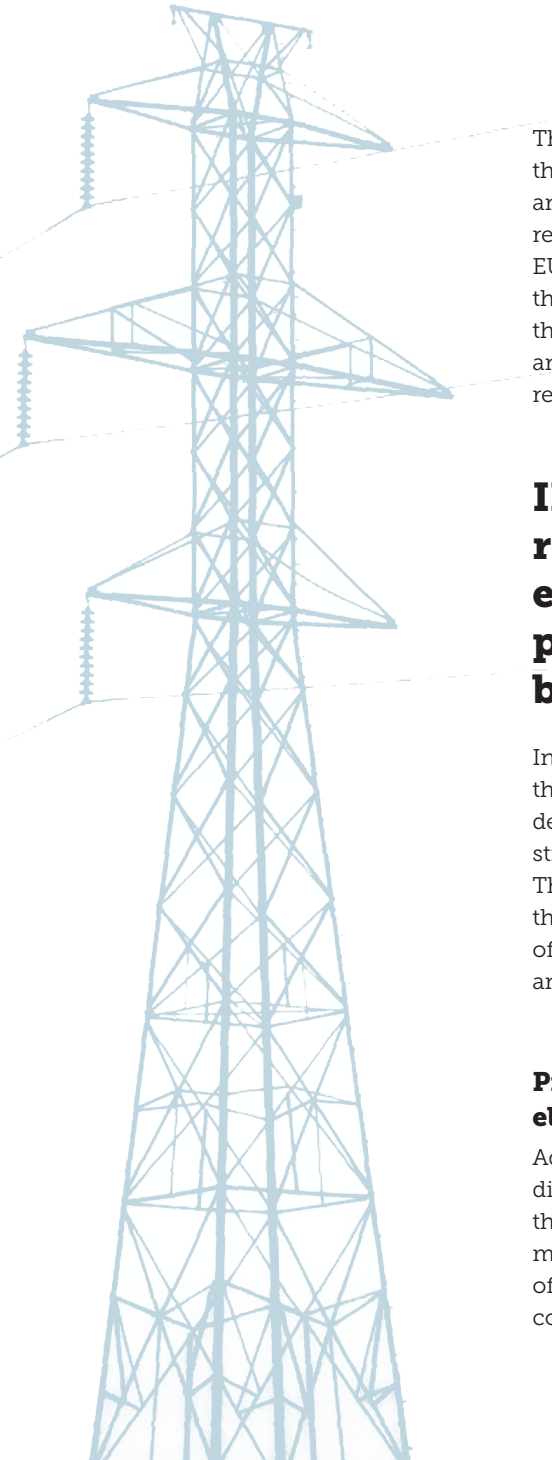
As the EU legislation was not designed with the potential of multiple use applications of EV batteries in mind, a lack of clarity around how the current legislative framework applies to these new technologies may inadvertently prevent potential innovations from being fully realised. The consortium convened to discuss solutions to make the EU legislative framework clearer and adequate for the large-scale use and reuse of EV batteries, the development of vehicle-to-grid services, and second use EV battery applications.

A collaboration to gather insights

The consortium agreed on an 18-month work plan that focused of three areas of work:

1. Conducting an analysis of the perceived regulatory barriers,
2. Putting forward recommendations to overcome these barriers, and
3. Producing a draft report on these issues.

As Innovation Deals are undertaken on a voluntary basis, the European Commission does not provide funding. The reports are produced at the consortium's expense by their own employees or contracted consultants. The Dutch startup Lomboxnet, Groupe Renault, and PWC worked together on the report analysing the regulatory barriers to the smart charging of EVs and second life use of EV batteries.[4] Experts on the management and second use applications of EV batteries at Groupe Renault led the work on the report assessing the legal and regulatory barriers to the optimization of EV battery life cycles.[5]



The French and Dutch Ministries supported the private sector partners by identifying and providing an understanding of national regulations, as well as the transposition of EU directives at the national level, related to the scope of the Innovation Deal. From this, the private sector partners carried out their analysis and the reports were sent to the relevant European Commission services.

ID Consortium's recommendations to enable the circular potential of EV batteries at scale

In their reports, the consortium put forward their recommendations to promote the design of a better functioning market and stimulate the uptake of these technologies. These reports served as a starting point for the discussion with policymakers on the use of EV batteries as electricity storage devices and in post-vehicle applications.

Promoting EV batteries as electricity storage devices

Adapting the regulatory framework at different levels of governance can support the design of a better functioning electricity market that could enable smart charging of EVs and second use of EV batteries. The consortium pointed out that establishing a legal definition of "storage" at the EU level would enable the private sector to use EV batteries as electricity storage devices. The consortium also pointed out that adapting grid costs, netting rules (rules regarding the settling of a total electricity price for households that both produce and consume energy), and the procurement of flexibility services by grid operators could create incentives for the rollout of smart charging and stationary storage infrastructure and technologies.

Promoting the reuse of batteries in post-vehicle applications

The legal definition of certain terms such as "waste", "re-use", "same-purpose" and "end-of-waste" are often ambiguous in legislative texts and lead to the misclassification of many resources as waste. This is also true for EV batteries. The partners proposed that taking into account circular business models where materials, components or entire batteries can be reused can help to redefine these notions. Furthermore, the consortium argued that allowing the transfer of the Extended Producer Responsibility, from the initial producer of a battery to the operator who will reuse it or its components and put it on the market a second time for a different energy storage application, would incentivize battery producers to develop, promote or enable second life applications of their batteries.

On the back of the reports, the European Commission met with the consortium to discuss the findings of the reports, requested clarifications on the potential impacts of the alleged regulatory barriers, and provided their opinion on the possible ways of addressing these challenges.

The insights from the reports served as inputs for discussions on the legislative framework. To ensure that the legislative process is fair and transparent, the European Commission also conducted further analysis and inputs, and consulted a broader group of stakeholders. The reports related to several EU Directives:

- In the context of the revision of the EU Battery Directive, in line with the *European Green Deal*, the European Commission launched a public consultation that reflected some of the main concerns raised in the consortium's report, engaging stakeholders from across the battery value chain to gather multiple perspectives on the topic. In December 2020 the European Commission put forward a proposal on sustainable batteries for a circular and climate neutral economy.[6] The European Parliament and Council are putting forward their opinion on the Commission's proposal.
- Another part of the consortium's recommendations relate to the energy market regulations. These have not yet been considered.

Lessons learned from the two pilot ID consortium projects:

Based on the lessons learned from the two pilot projects, the European Commission has decided to continue Innovation Deals and to broaden the scope beyond the circular economy. Innovation Deals are a novel private-public mechanism and both the innovators and the European Commission and the consortium have identified ways in which this engagement process can be further improved:

Ensuring capacity and a sense of ownership:

The progress of this Innovation Deal depended on the capacity and availability of the consortium members' employees. Also, the reports and work for the Innovation Deal were delivered at the expense of the consortium members. Therefore, foreseeing staff capacity and a budget among all the consortium members upfront can support the delivery of an Innovation Deal. Having all the representatives of the consortium members actively engaged and having a sense of ownership throughout the process will ensure that the objectives of an Innovation Deal are driven forward. Hiring an independent and competent third party to carry out the analysis on behalf of the consortium can support the delivery of an Innovation Deal, and ensure that findings reflect the perspectives of all concerned stakeholders.

Identifying the relevant legislations:

Legislation may inadvertently impede the uptake of an innovative solution and new technologies. Conducting a preliminary analysis to identify all the legislations that are relevant to the topic of the innovation deal will help to define the objectives of the project. It can also help to identify the relevant ministries, departments, and agencies from the public sector partners that should be involved in the consortium, as well as the relevant time frame in accordance with the legislative agenda. Public sector partners can provide the private sector partners with a better understanding of the current regulatory framework and support this public-private dialogue.

Improving the selection process:

The European Commission used eligibility criteria to select the two Innovation Deals out of 32 proposals. Improving the selection criteria will ensure that more innovative projects across a broader range of topic areas can become an Innovation Deal. Shortening the time between the selection of a proposal and the launch of the Innovation Deal will help to create momentum.

For more information:

Groupe Renault's Website

European Commission's Website

LomboXnet website

This case study was originally published in August 2021 as part of the Universal circular economy policy goals, Ellen MacArthur Foundation

Timeline of this Innovation Deal:

Dec 2015	The European Commission introduced the concept of Innovation Deals (ID) in the "Closing the loop - An *EU action plan for the Circular Economy*" communication.
Sept 2016	European Commission opened a call for expressions of interest for projects on Circular Economy.
Nov 2016	The Commission selected two projects out of 32 proposals.
2017	Preparation of the Joint Declaration of Intent and discussion between the European Commission and the ID consortium.
Mar 2018	Signing of the Joint Declaration of Intent by the European Commissioners for Environment, Maritime Affairs and Fisheries, Karmenu Vella, and for Research, Science and Innovation, Carlos Moedas and the ID Consortium. Launch of the ID.
July 2018	Meeting of the ID consortium and presentation of the analysis of the regulatory barriers at the European, national and regional level.
Sept & Oct 2018	Meetings of the ID consortium and presentation of proposed solutions to overcome barriers and recommendations for actions.
Feb 2019	The European Commission presented a first opinion on the energy-related issues.
May 2019	Presentation of the ID consortium's draft report on 'Regulatory barriers for Smart Charging of EVs and second life use of EV batteries'
July 2019	European Commission analysed the draft report and presented a second opinion on the energy related issues.
Feb 2020	The ID consortium replied to comments from the European Commission with a Memorandum
Dec 2020	The European Commission put forward its proposal on sustainable batteries for a circular and climate neutral economy.

Collaboration to promote innovation: how this policy example illustrates elements of the Universal circular economy policy goals framework

This Innovation Deal illustrates one example of how policymakers and companies can collaborate for system change as outlined in Ellen MacArthur Foundation's Universal circular economy policy goals. While the policy mechanism discussed in this case study reflects mainly Goal 5, the outcomes of the process may link to and support several of the other Goals.

GOAL 5

Collaborate for system change

This example demonstrates how the deployment of innovative solutions depends on the development of the adequate infrastructure, markets, and systems to support them. Currently, most policy frameworks have been developed to support linear processes and systems. These may inadvertently disincentive the deployment of innovative solutions for the circular economy and cause technological and infrastructural lock-ins. Hence the importance of fostering responsive public-private collaboration across value chains, such as demonstrated by this Innovation Deal, in order to identify and address barriers, support the scaling of new technologies, develop new policies and align existing ones, to support the transition towards a circular economy. Regulatory sandboxes and market dialogues can be other forms of developing such collaborations.

Endnotes

1 European Commission, *Closing the loop - An EU action plan for the Circular Economy*, (2015)

2 European Commission, *Identifying barriers to innovation*, (Accessed July 2021)

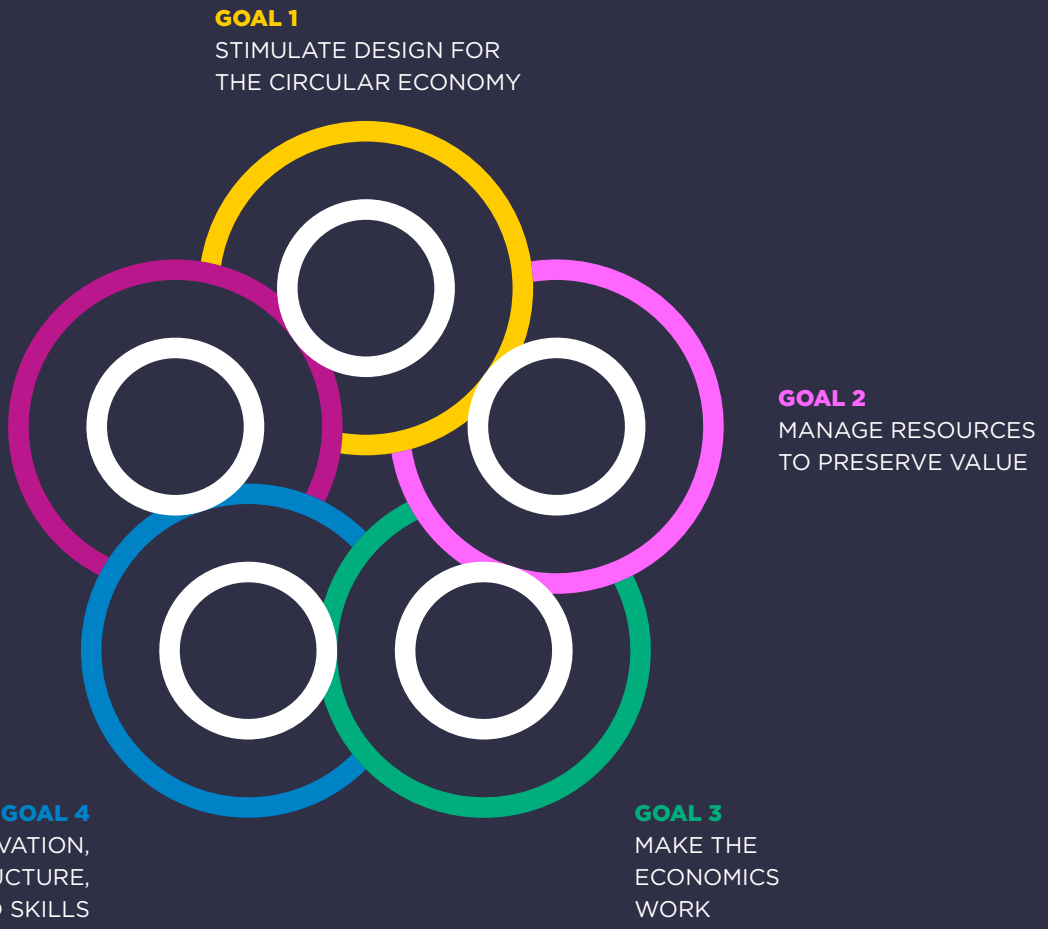
3 Groupe Renault, *From E-Mobility to recycling: the virtuous loop of the electric vehicle*, (Accessed July 2021)

4 PwC, *Regulatory barriers for Smart Charging of EVs and second life use of EV batteries: Final Report*, (2019)

5 Groupe Renault, *Innovation Deal Virtuous Loop of Electric Vehicle: Assessment of Legal and Regulatory Barriers to the Optimization of EV Battery Life Cycle*, (2018).

6 European Commission, *Green Deal: Sustainable batteries for a circular and climate neutral economy, Press Release* (10 December 2020).

About the Universal Circular Economy Policy Goals



In January 2021 the Ellen MacArthur Foundation, published a paper Universal circular economy policy goals: enabling the transition to scale, aiming to create a common direction of travel in policy development for a faster transition to a circular economy. The five circular economy policy goals detailed in the paper can offer solutions to key global challenges such as climate change, biodiversity loss, and pollution, whilst delivering economic development.

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