

Smart Energy Lab

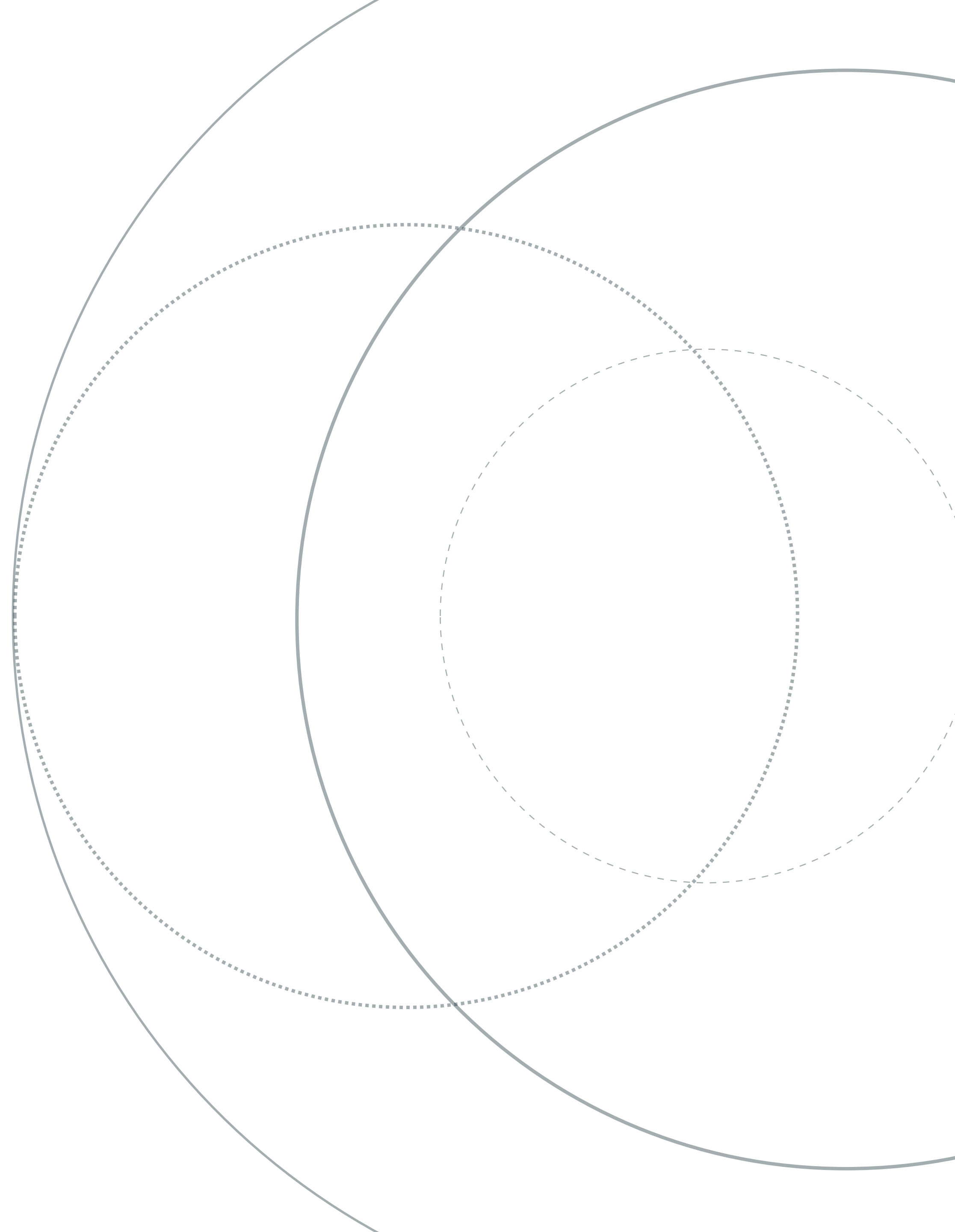
Laboratório colaborativo para a energia

University of Coimbra

12th February 2020

Agenda

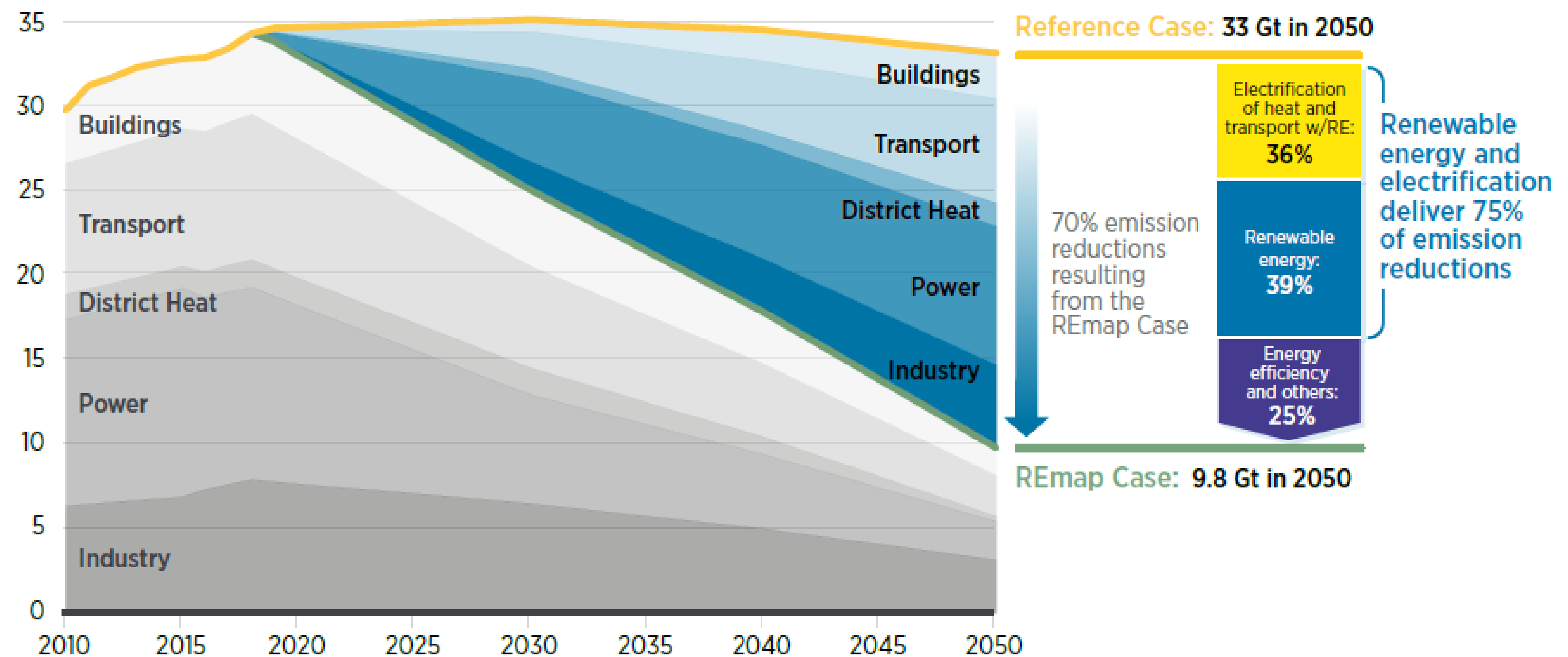
1. Building a Smart Energy Lab
2. Focus areas
3. Smart Collaboration: two invocations



RES and energy efficiency, boosted by electrification, can provide over 90% of the needed reductions in energy-related CO₂

Annual energy-related CO₂ emissions and opportunities for reduction

Gt CO_{2eq}, 2010-2050



Leading the fight against climate change, the EU is currently revising its long-term climate ambition

EU objectives		2020	2030	2050
	Energy Efficiency	20%	32.5% CEP Energy Efficiency Directive	?
	Renewables share	20%	32% CEP Renewables Directive	?
	Emissions' reduction (vs 1990)	20%	50%-55% (currently 40%)	net-zero (currently >80%)

The European Commission proposed in 2018 the Clean Planet for All strategic long-term vision to achieve carbon neutrality by 2050

Energy transition driving new client solutions

Client pushing for new and innovative solutions

Key figures



Increased requirement for savings and **energy efficiency**

32.5%

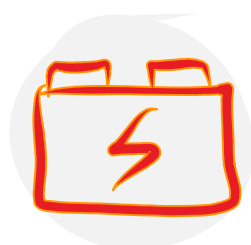
EU energy saving
target 2030



Decentralized solar uptake partially
shifting generation towards downstream

>180 GW

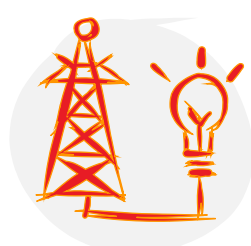
North America, Europe and
LatAm 2018-30



Adoption of distributed storage

~50 GW

global installed capacity by
2030



New business models (e.g. flat rates) to
anchor on **higher flexibility needs**

~100 GW

demand response capacity
by 2030 (Europe and US)



EVs mass adoption

>130 Mn

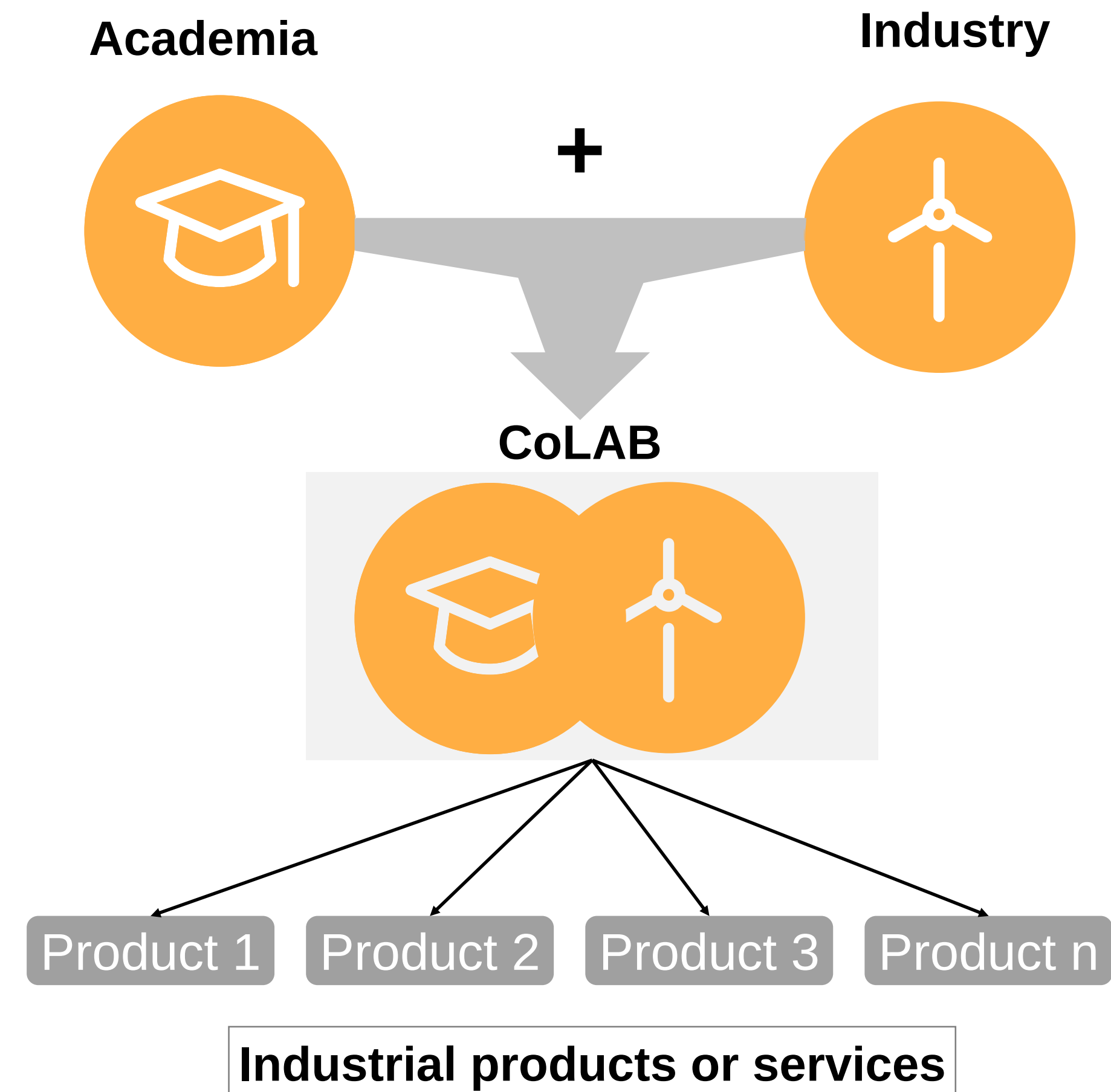
global EV stock 2030

Collaborative Laboratories (CoLAB)

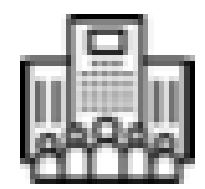
CoLABs goal:

- ✓ Enhance **co-operation between different institutions and** create highly-qualified and scientific employment
- ✓ Implementation of research and innovation agendas **aimed at creating economic and social value**

Certified and coordinated by FCT and ANI



Smart Energy LAB is a CoLAB for energy driven by a nonprofit organisation with multiple equity partners



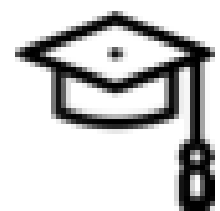
Companies



40%

accenture

30%



Academics



6%



6%



6%



6%



6%

Two main guidelines agreed by equity partners



Open Marketing with protective investment rules

B2B2X

Any client, ... even competitors

Exclusivity to protect investors



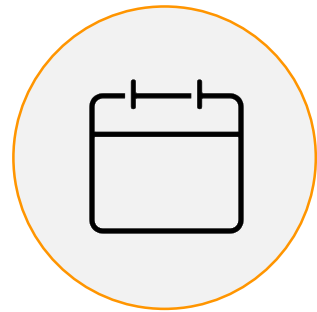
Own intellectual property rights

Developed IP owned by Smart Energy LAB (whenever possible)

In case of use IP owned by Associates, the corresponding intellectual property rights will be regulated by agreement between the Parties

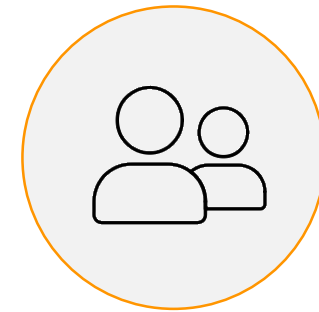
Expected **delivery solutions**

The Smart Energy LAB guidelines to develop P&S



1 year

First product version launch
in 1 year or less



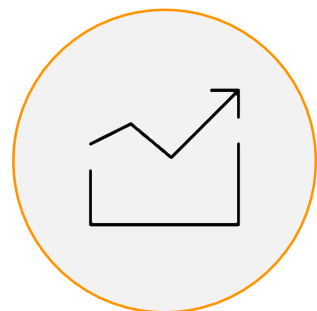
1.000.000

Market size of 1.000.000
customers or more



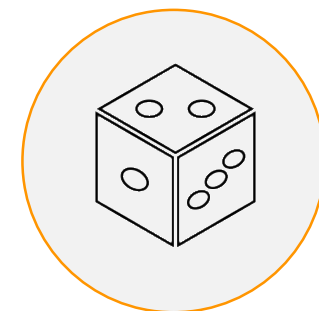
Geography

Product with market in > 1
geography



Scalable

Product should be design for
scalability

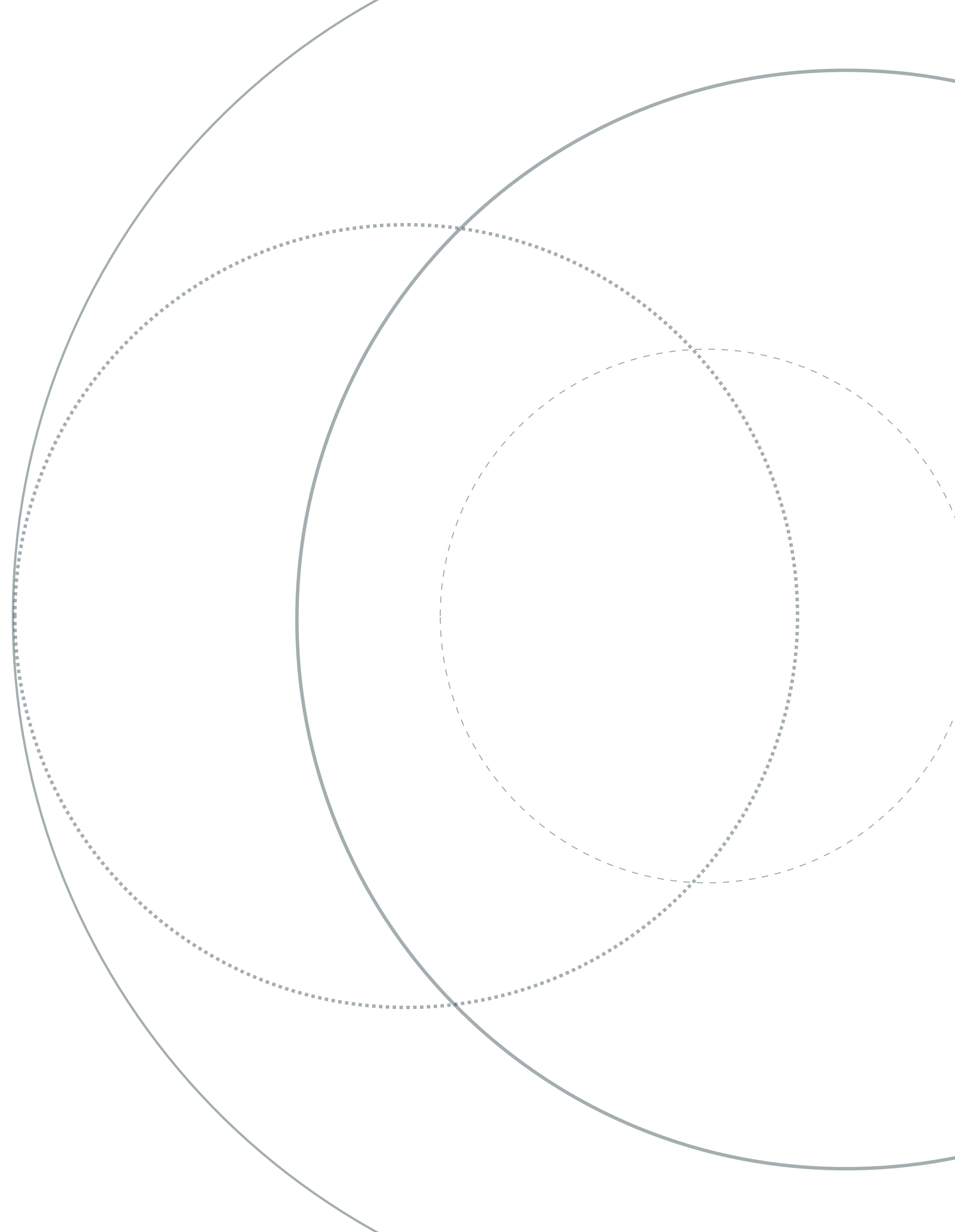


Big bets

Launch Big Bets in 2 to 4
years

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The “North Star”

Sessions were performed to promote alignment, sharing knowledge and experience among different partners, while building a shared vision and defining objectives for the newborn Smart Energy LAB.

Gathered all associates representatives that worked side by side after inspirational talks from international specialists.



3RD PART

Associates discussed work areas to focus based on their competences and align the Smart Energy Lab mission in a design thinking workshop facilitated by Accenture Digital team.

Facilitators: Andrea Sá Couto,

Fonseca, Marta Salgado

Maria João

1ST PART

EDP kick-off the day, stating main goals and key assumptions at the heart of Smart Energy Lab.

Speakers: Vera Pinto Pereira and Filipe Santos



2ND PART

Accenture presented new downstream trends and international reference use cases to inspire the work session.

Speakers: Sanda Tuzlic (Belgium) &

Lydiard-Wilson (UK)

Jonathan



A group of children are playing with hula hoops in a grassy park. In the foreground, a young girl with braids, wearing a blue and white striped dress, holds a large orange hula hoop. To her right, another girl in a green dress holds a purple hula hoop. Other children are visible in the background, also playing with hula hoops. The scene is outdoors with trees in the background.

Mission statement

“We are a **green dream** factory
that will make **tomorrow** possible,
improving life for everyone with new **energy solutions** through
smart collaboration.”

Discover with Insights

Domains landscape

The analysis estimates that in Europe alone, the market for connected energy products and services could represent a potential €52 billion to €73 billion in revenue in 2030 across three core value pools

Distributed Resources

Behind-the-meter offerings, focusing on helping customers achieve sustainable, manageable and efficient energy

15 – 20 B€¹

E-mobility

E-Mobility offerings, such as charge point infrastructure, charging services and data integration services to facilitate the e-Mobility ecosystem

10 – 20 B€²

Flexibility

Services for energy providers to leverage interconnection of devices, creating value across the new power model through modulation of energy supply and demand

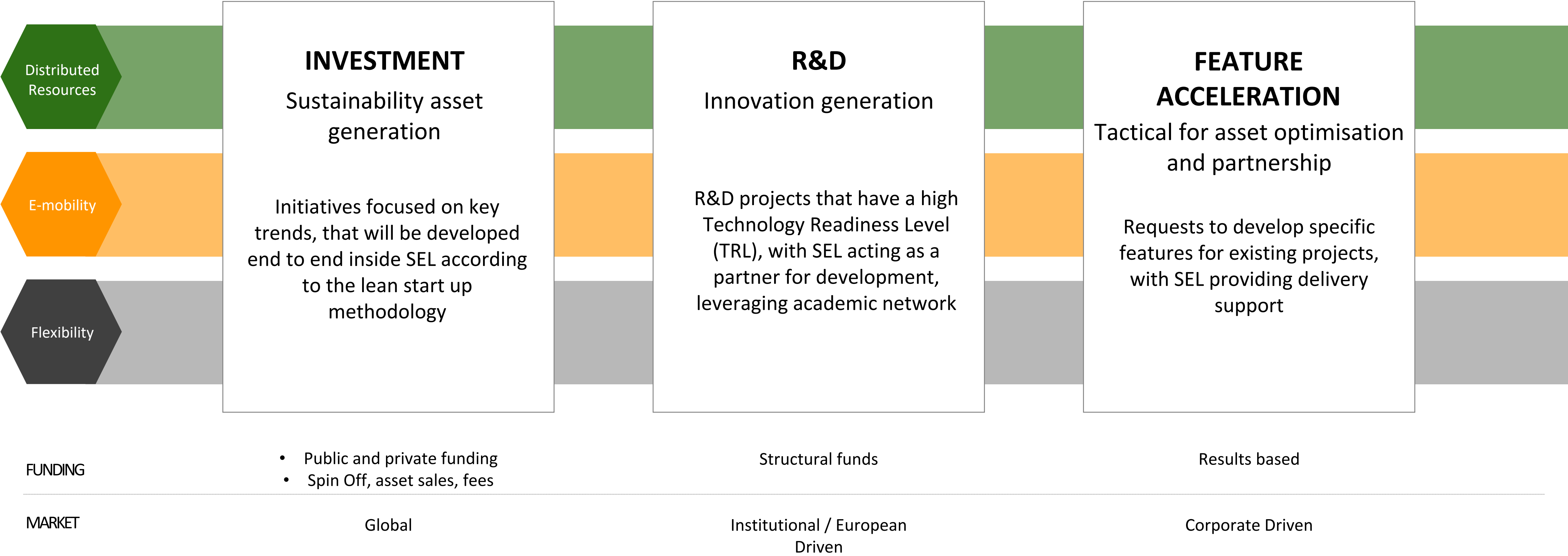
27 – 33 B€³

Source:

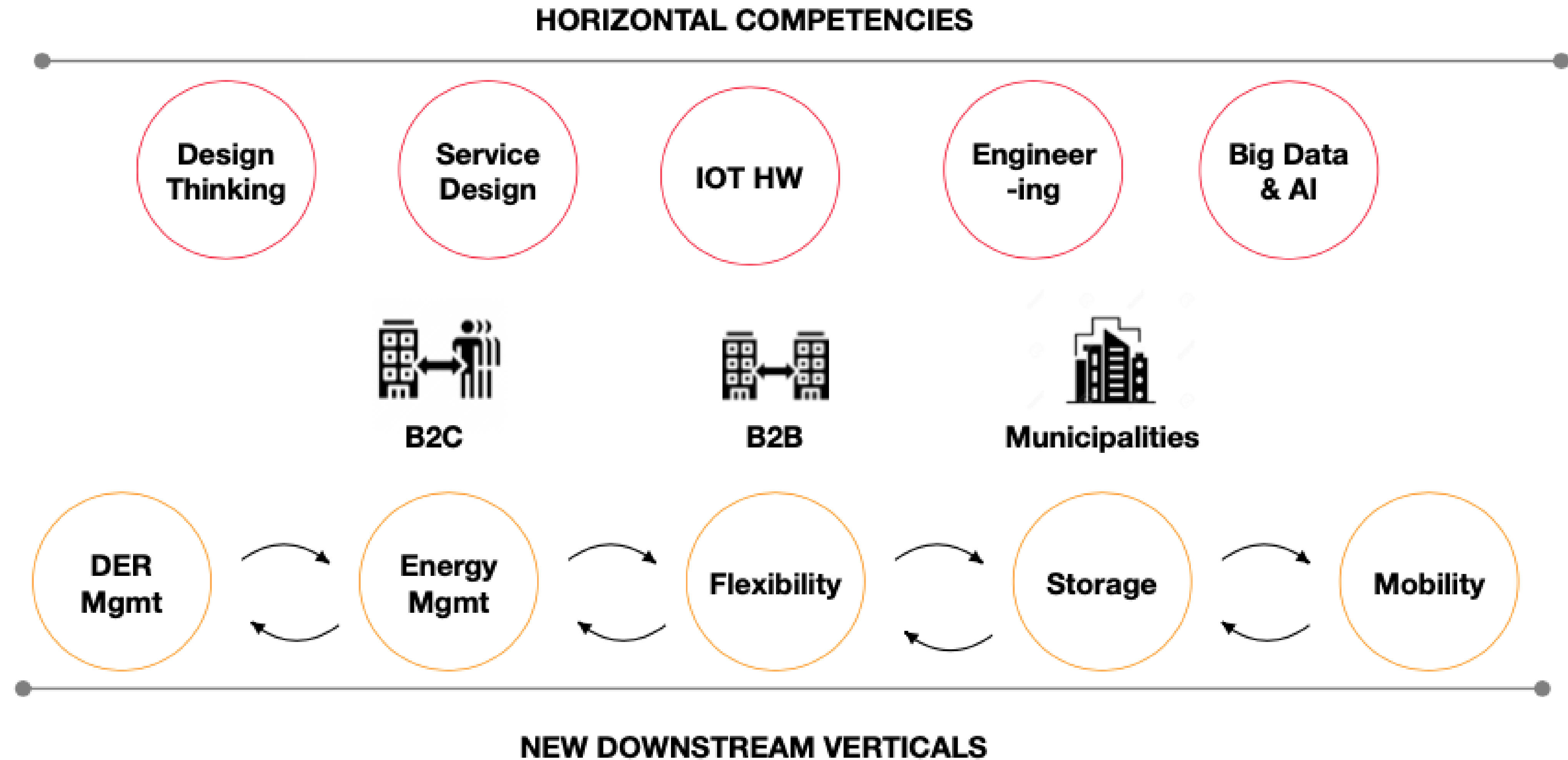
1. Accenture analysis based on Digitally Enabled Grid research program 2018 modeling, reference scenario, extrapolated for EU28
2. Accenture Research modeling based on extrapolation for EU28, subject to adjustment.
3. Accenture analysis based on Flex and Balances report, 2018

SEL's service lines

Projects and solutions developed at SEL range through three different categories, across all domains

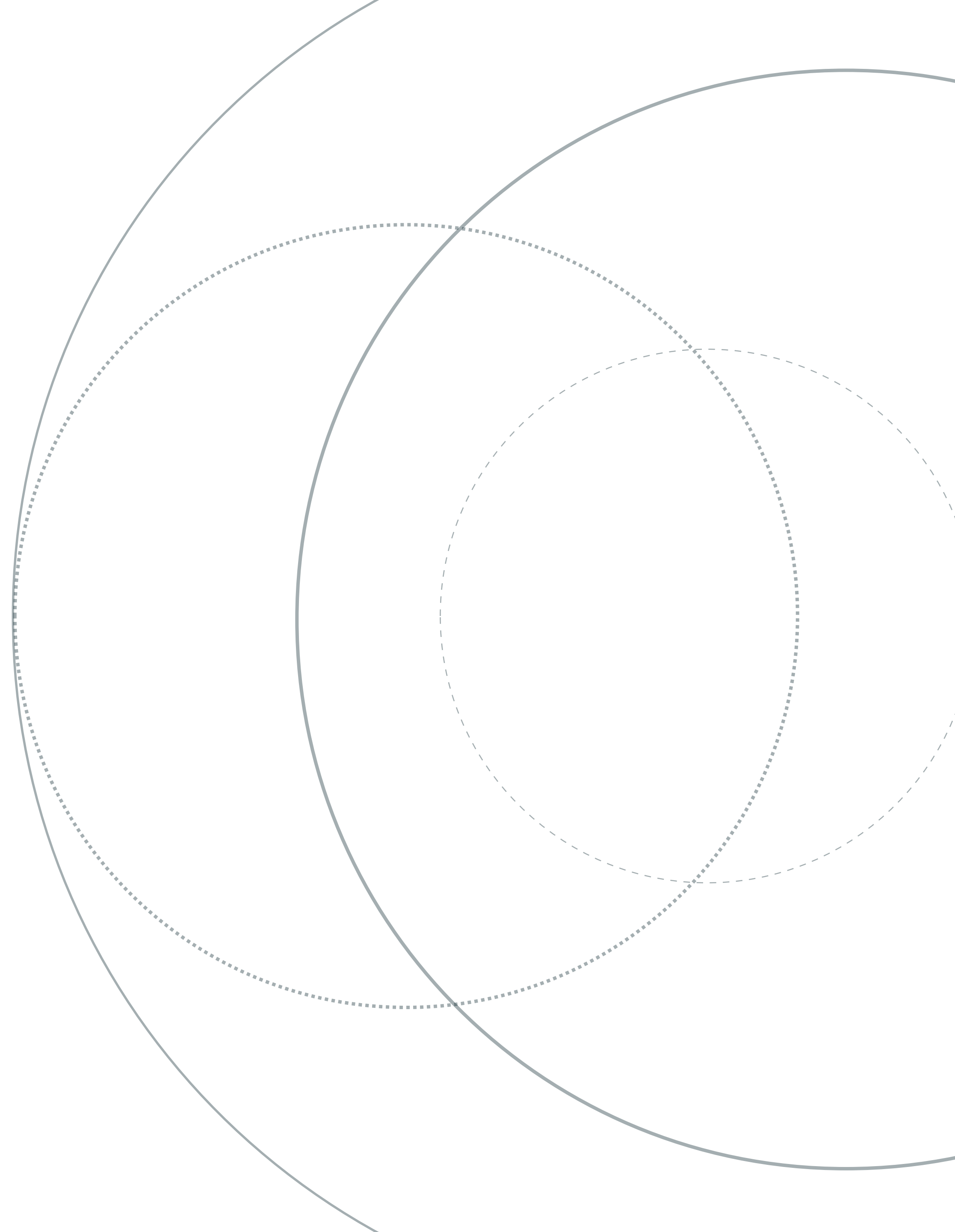


Activities scope



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Smart Collaboration: two invocations

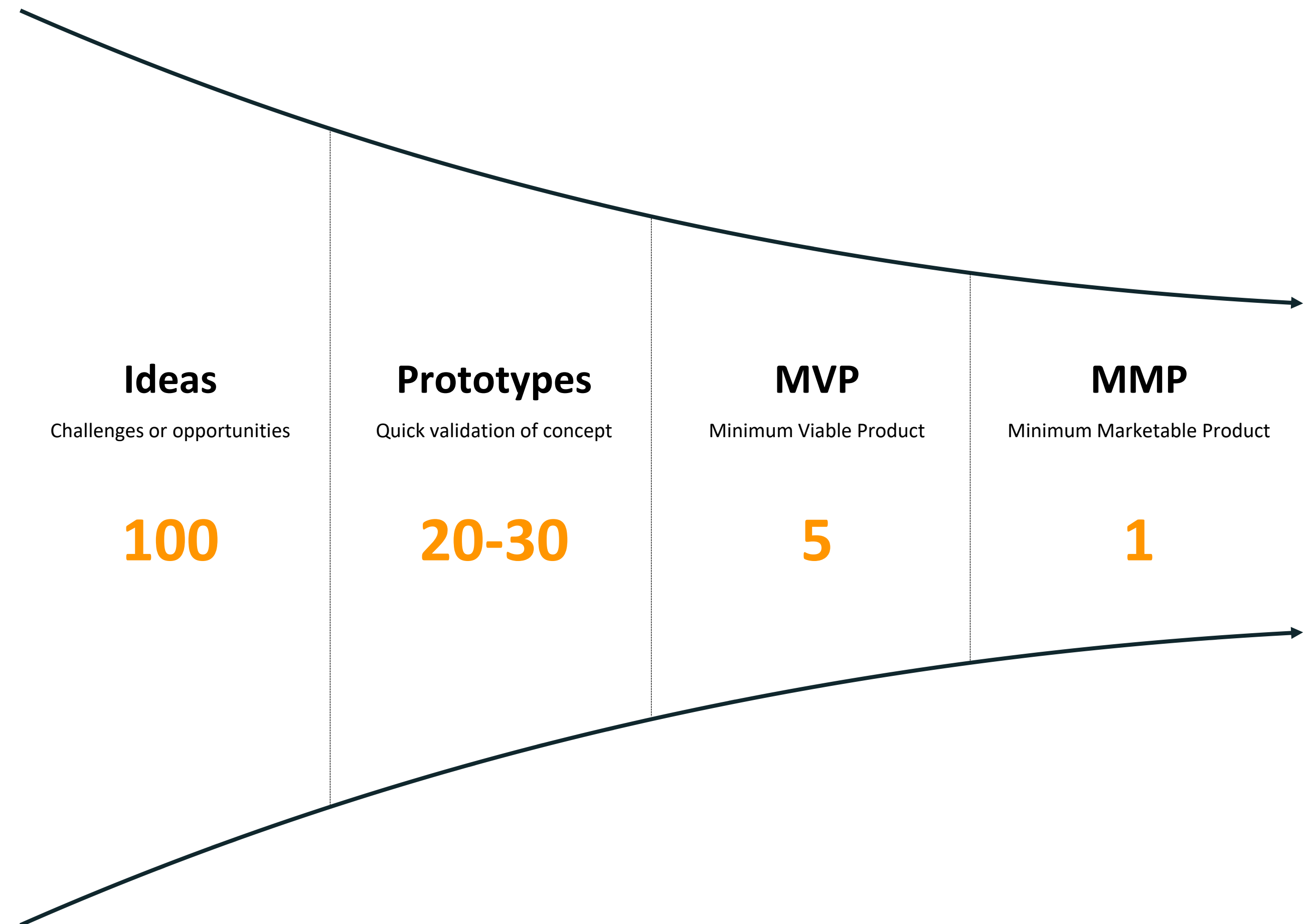
R&D Step Forward: Re-assess and recover knowledge already developed by the Associates

Target initiatives

- Initiatives developed by the Associates and related entities (e.g. spinoffs or start-ups)
- Did not follow through when scaling up to the market and, according to their project leaders, have potential and distinctive factors to be used in real life solutions.

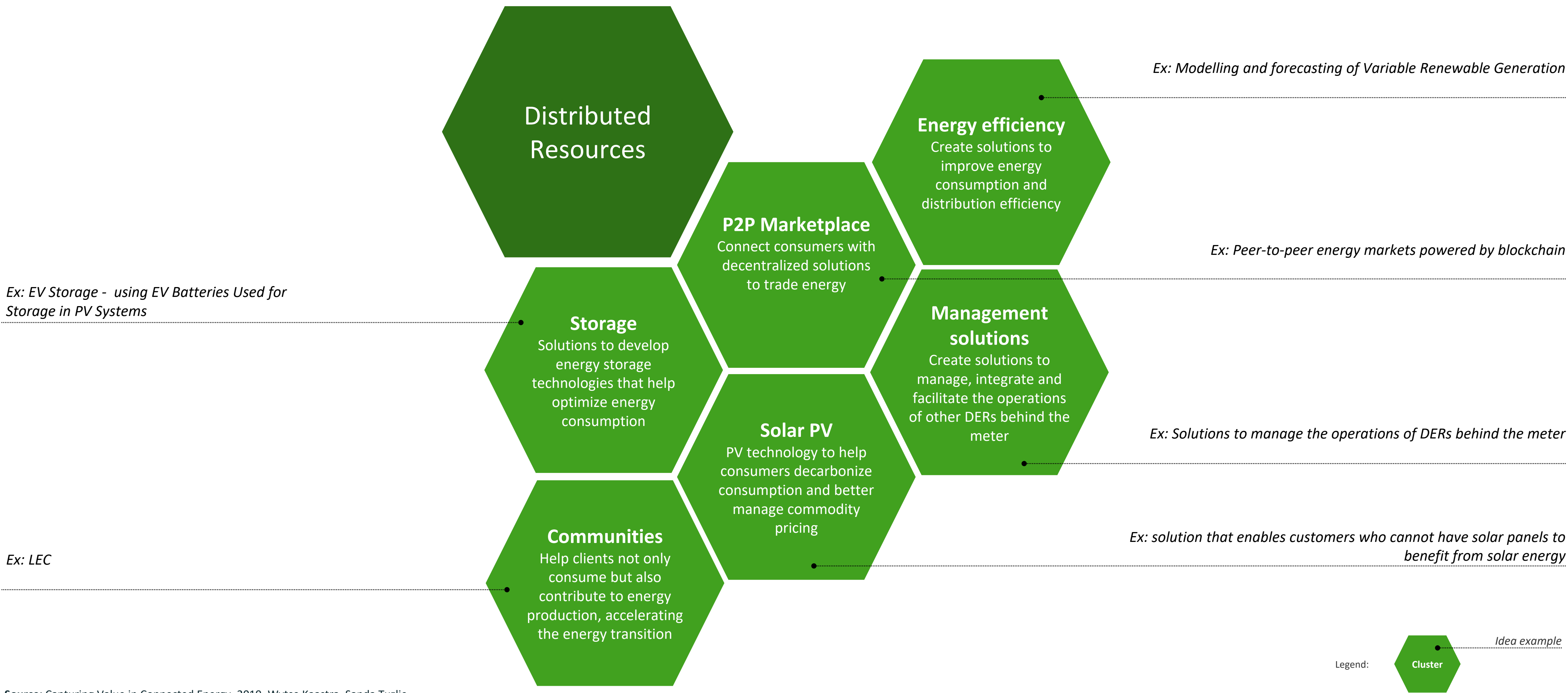
Evaluation as an “investment case”

- The project owner is responsible for the preparation and presentation of the initiative for an investment committee
- The goal is to follow through the next investment phase (e.g. prototype or MVP)



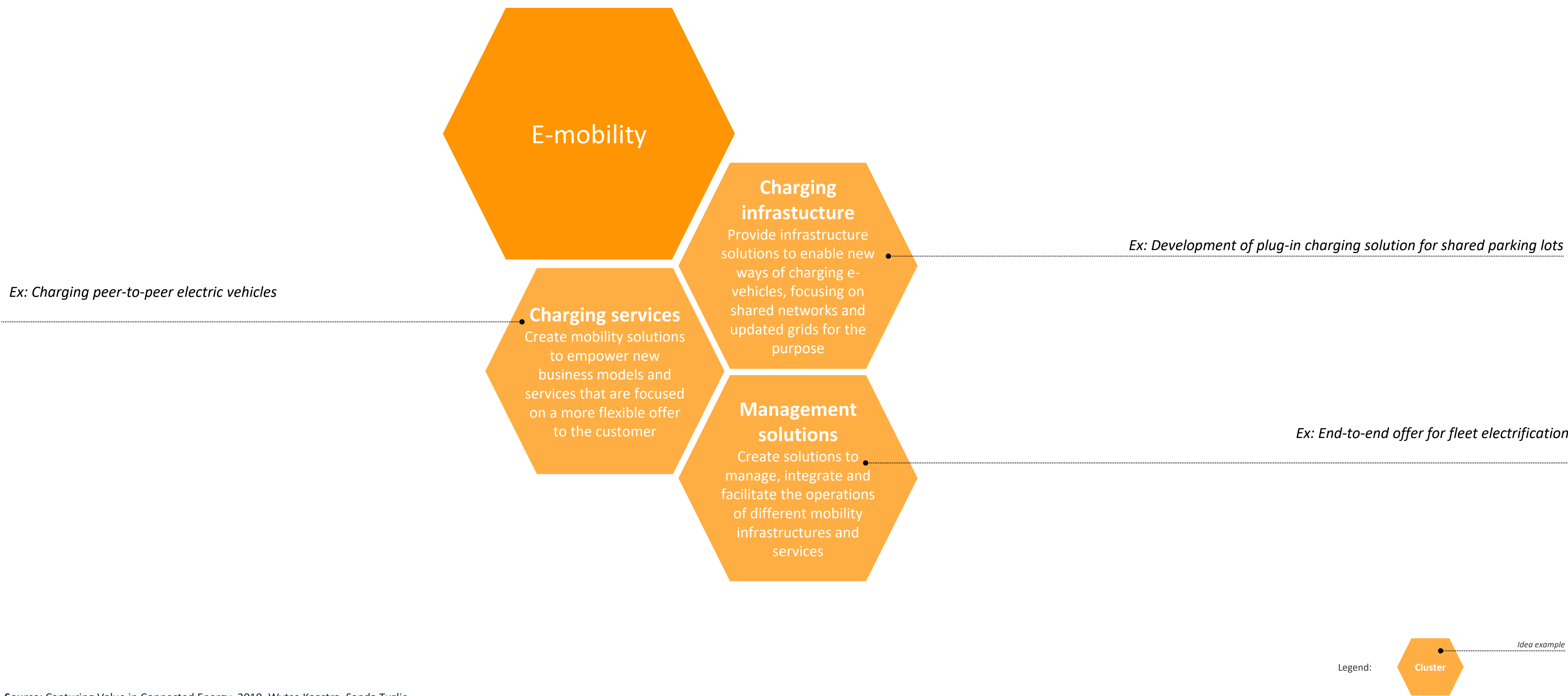
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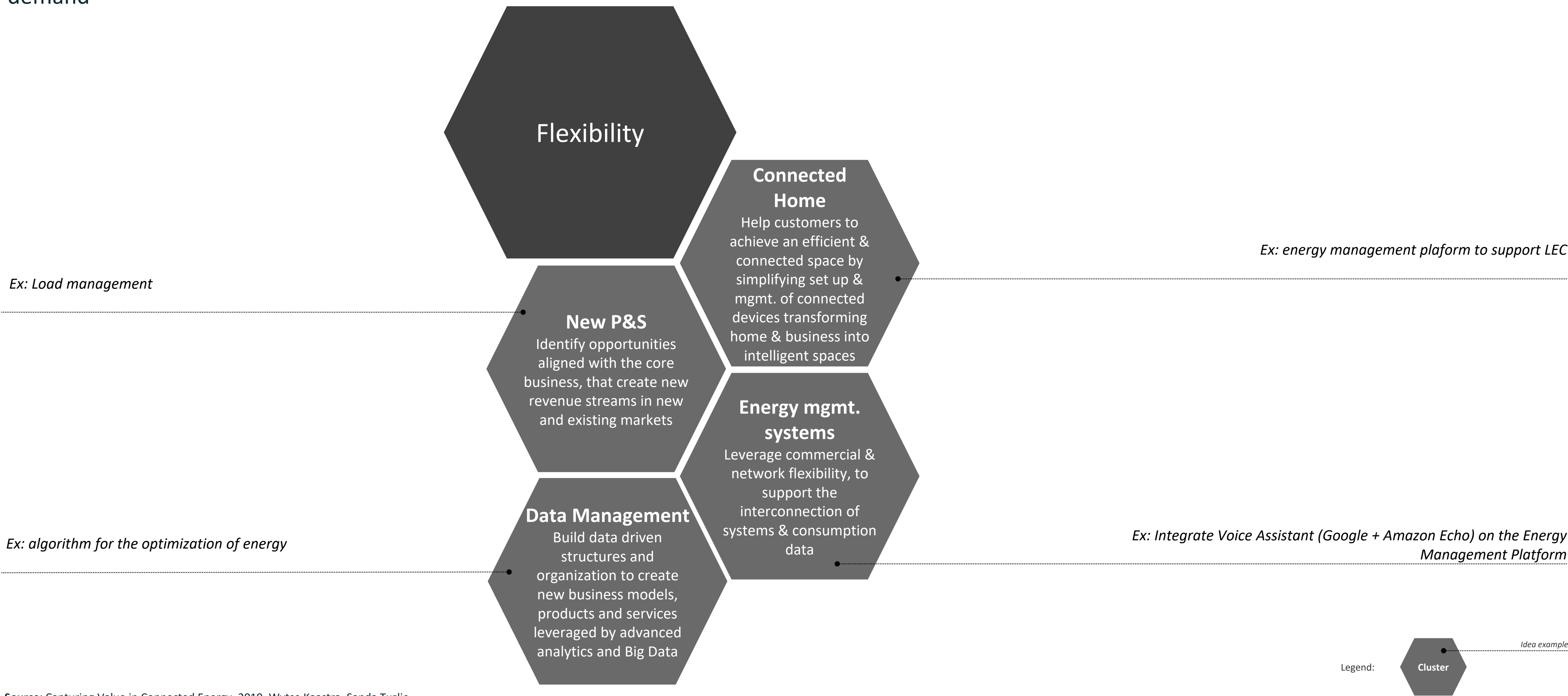
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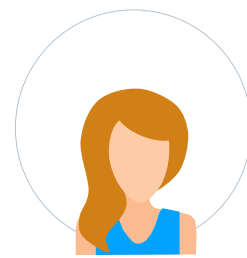
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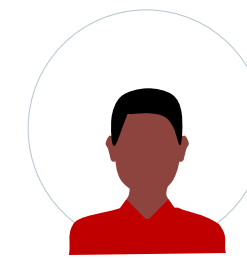


Smart Collaboration: two invocations

A—People



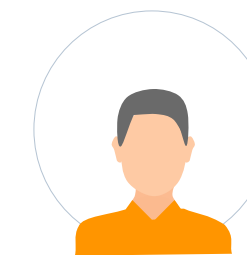
**Ideation
Manager**



**Service
Design
Lead**



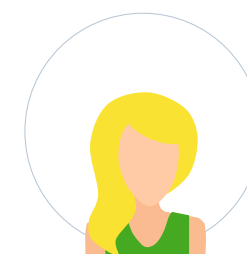
**Product
Manager**



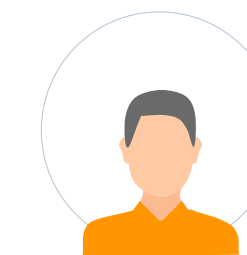
**Delivery
Manager**



**Product
Owner**



**Scrum
Master**



**Team
Member**

A - People

“We are a **green
dream factory
that will make tomorrow
possible,
improving life for everyone
with new energy solutions
through smart
collaboration.”**

Passion

For our mission

Curiosity

A curious and creative way of looking at the
energy world

Speed

Faster than the fast pace changing world

Fast Problem Solver

Sharp problem-solving skills

Plays with Uncertainty

Can I lead without knowing everything?

Team player

With easiness to work with cross-functional
teams

Where do we meet

info@smartenergylab.pt

Filipe Santos

Let's talk

Questions, ideas, comments,
dreams, visions and others ..

Smart Energy Lab

Laboratório colaborativo para a energia

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