

# 18<sup>th</sup> EUROPEAN WEEK of REGIONS and CITIES

05>09 OCTOBER 2020

12>16 OCTOBER 2020

19>22 OCTOBER 2020

# The Åland Islands

The Government of Åland Islands

Johnny Lindström, Government of Åland & Anna Häger, Flexens Ltd

#EURegionsWeek

RESTART  
EUROPE  
Together



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## Development and Sustainability Agenda for Åland

Development and Sustainability Agenda for Åland – or as we call it – The Everyone can Flourish Story, has been created and established within the Bärkraft.ax Network.

With the understanding that nature constitutes the foundation of human existence, the Parliament of Åland and Åland Government chose to adopt a goal of total sustainable development in Åland in 2014.

A network, open for all citizens, organizations, authorities and companies, established the *Development and Sustainability Agenda for Åland*. A true bottom-up, inside out process.



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The agenda consists of one Vision and seven Strategic Development Goals for 2030. The Agenda has been adopted by the Parliament and integrated into governmental budgeting.

It is with gratitude that the people, ordinary grassroots, the NGO's, the municipalities, the companies and the government of the Åland Islands **received the European Sustainability Award 2019** at a High-Level Conference organized by the European Commission in Brussels in April 2019.

We are fully aware that our autonomous and demilitarized society, are far from a fully sustainable society. But the award inspire us to keep on striving.

One important next step is to become fossil free – ASAP.



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## Milestones for Åland in the latest Energy and climate programme is:

80% lower carbon dioxide emissions compared to 2005 [\* excluding international shipping].

80% renewable energy of total energy use [\* excluding other shipping].

100% locally produced renewable electricity from total electricity use.

50% lower carbon dioxide emissions from road traffic compared to 2005.

No fossil heating of buildings and continuous and ambitious work for energy efficiency.



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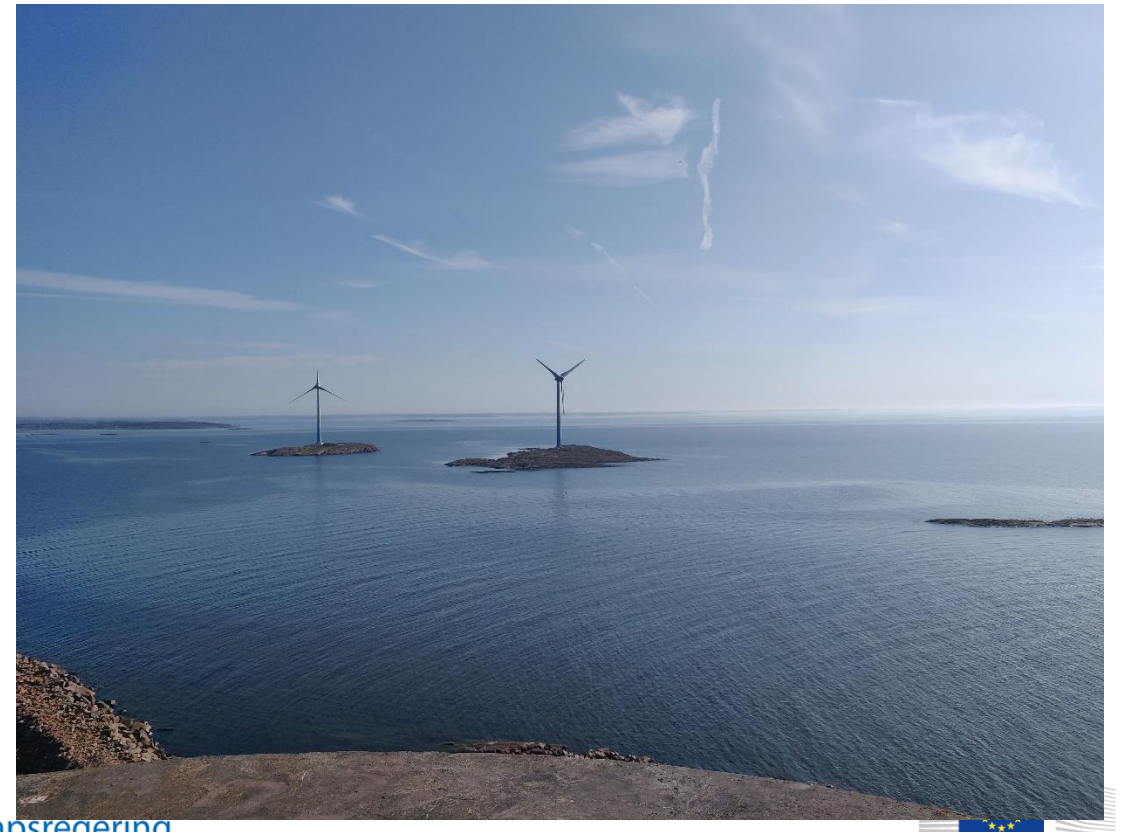
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## How can we reach these goals?

Electricity and flexibility-market and distribution are of course important:

Short time:

The new Wind Power Production Aid Act will allow a threefold increase in wind power production in 2022. Additional wind farms will be established on market terms while market price on windmills has decreased to market base level.



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Long term:

Åland launched in September 2020 an off shore windfarm project within its territorial waters. The area consists all together of 1000 km<sup>2</sup> and can, when fully established, .....500...P2x.....



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We can, through investment support, facilitate the establishment of innovative large-scale renewable electricity generation techniques (eg solar parks, gasification CHP, hydroelectric power, fuel cells).

In the area of hydroelectric power can we mention the project Nyhamnsgruvan, a disused iron-mine in an island outside of Mariehamn, when filling the cave with seawater it will generate 8 megawatt hours of energy. The pumps are driven with energy from the windmills. This can be realized in a couple of years and will be one of many showcases that Åland as a test-area for renewable energy and new technics hopefully can show for the international market.



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# Public – Private – Partnership

The bridges between



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The Government of Åland has established a joint venture company Flexens Ltd to develop the Smart Energy Åland project. Flexens cooperate actively in evaluating and implementing various types of innovative energy system solutions for electricity generation.

The project was launched in 2014 and gained full body and momentum in 2019 through the partnership with Flexens.

# SMART ENERGY ALAND



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## Flexens background

From research to implementation



### Preceding national research programs in Finland (2010 – 2016)

- Smart Grids and Energy Markets
- Future Combustion Engine Power Plants
  - Efficient Energy Use
  - Future Flexible Energy Systems



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### Åland identified as demo site

Studying a 100% renewable and self-sufficient energy system in Åland



### Project development company founded

Business Finland funding secured



### Smart Energy Åland project gains momentum

Project development activities started, aiming towards a 100% renewable and self-sufficient energy system in Åland



### Company growth

Leverage best practices from Åland demo and scale operations on a global market



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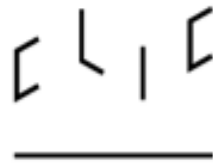
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## Public – Private - Partnership

### Owners of Flexens

#### CLIC INNOVATION LTD, 50%

Consortium of Finnish research institutes and companies specialized in energy systems, bioeconomy and circular economy



#### OTHER SHAREHOLDERS, 50%

Local demo partners including the Government of Åland, testbed operators and energy companies

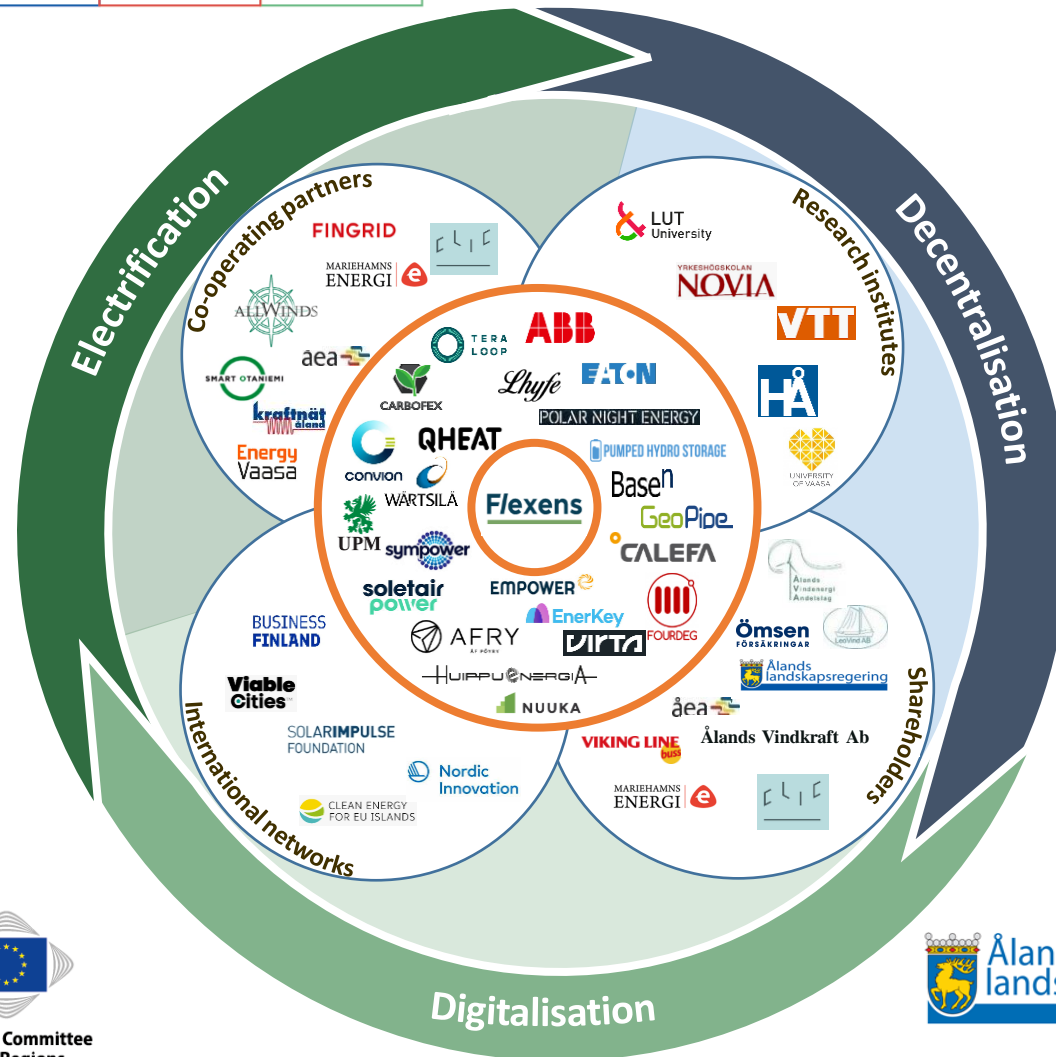


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## Solid base built on research and co-operation



Flexens, with its roots in the extensive research programme led by the Finnish government during 2010-2016, was founded in 2018 to become the platform company for the energy sector in Finland, offering unique know-how and technical expertise to the growing global renewable energy market.

- **Business Ecosystem:** Large multinationals and cutting-edge technology start-ups, providing Flexens with the deep sector and technology insights needed to be at the front of the energy transition
- **Research institutes:** Universities and research agencies with extensive competence within the novel field of flexibility resources and disruptive technologies
- **International networks:** Change agencies with a common interest in facilitating the energy transition gives Flexens a global network and access to business leads
- **Co-operating partners:** Local actors in the Flexens' vicinity who are vital to cooperate with in achieving the Smart Energy Åland targets
- **Shareholders:** Flexens' owners provide both industrial advice and strategic business development support

Through its platform, Flexens has a unique opportunity to take a leading role in the energy transition, creating business opportunities for all stakeholders.

## A test bed for RES solutions needed for a full-scale energy transition

Wide range of technologies considered within Smart Energy Platform

- Flexibility Marketplace
- Energy communities
- Energy portal
- Solar PV
- Solar thermal
- Wind power (incl. small scale)
- Heat pumps
- Mid-deep geothermal
- Pumped hydropower storage

- Heat-to-heat storage
- Waste heat recovery from water treatment
- Heat recovery from the sea
- Electrolysers & CHP fuel cell
- Demand response (private houses, industrial consumers)
- EVs and other land traffic alternatives
- Marine transportation (battery powered and fuel cell ferries)
- Bio-oil (side product from e.g. biochar production)
- Electricity-to-heat storage



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# Citizen Engagement

Change happens when people come together



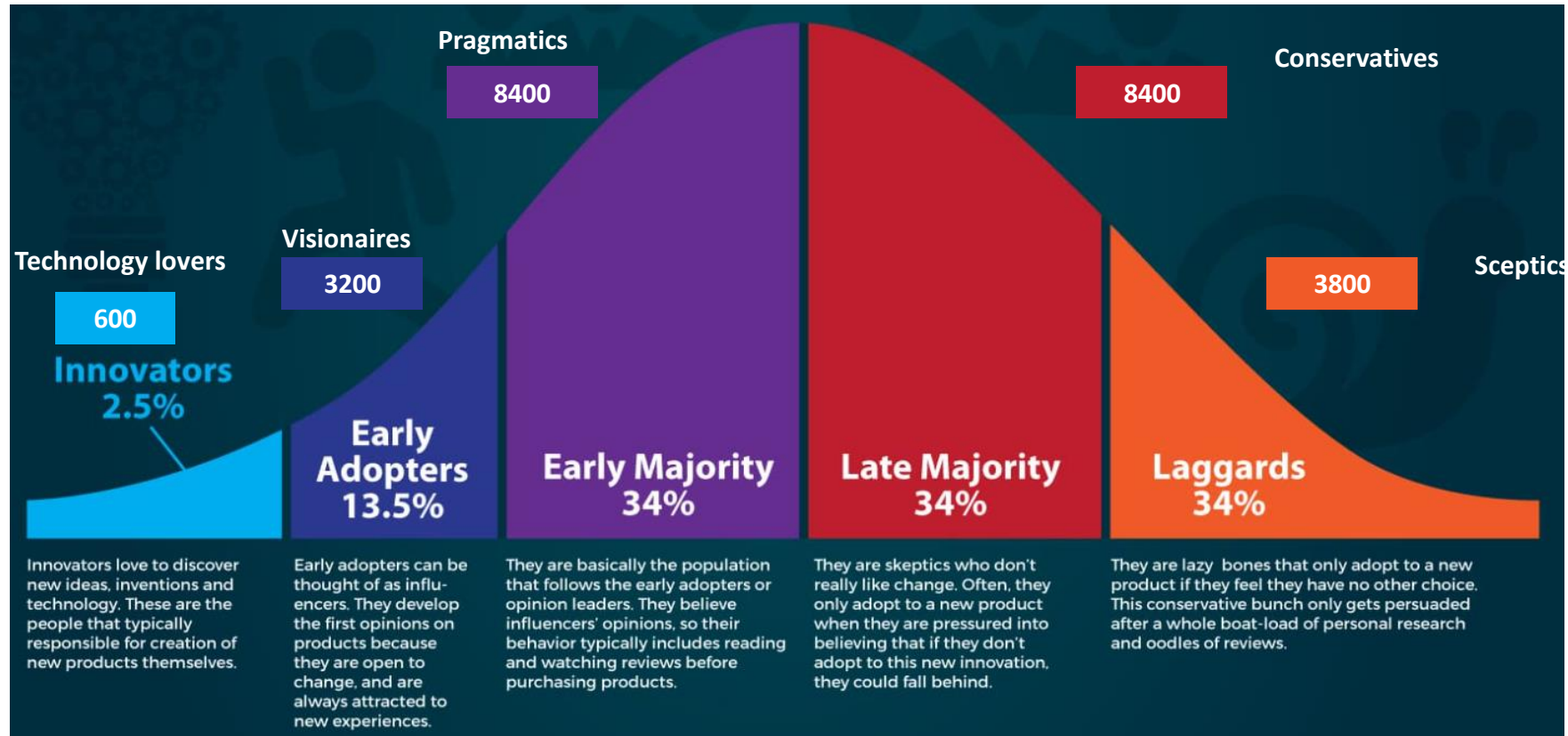
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F.G.N. Li, N. Strachan

Energy Research & Social Science 51 (2019) 67–81

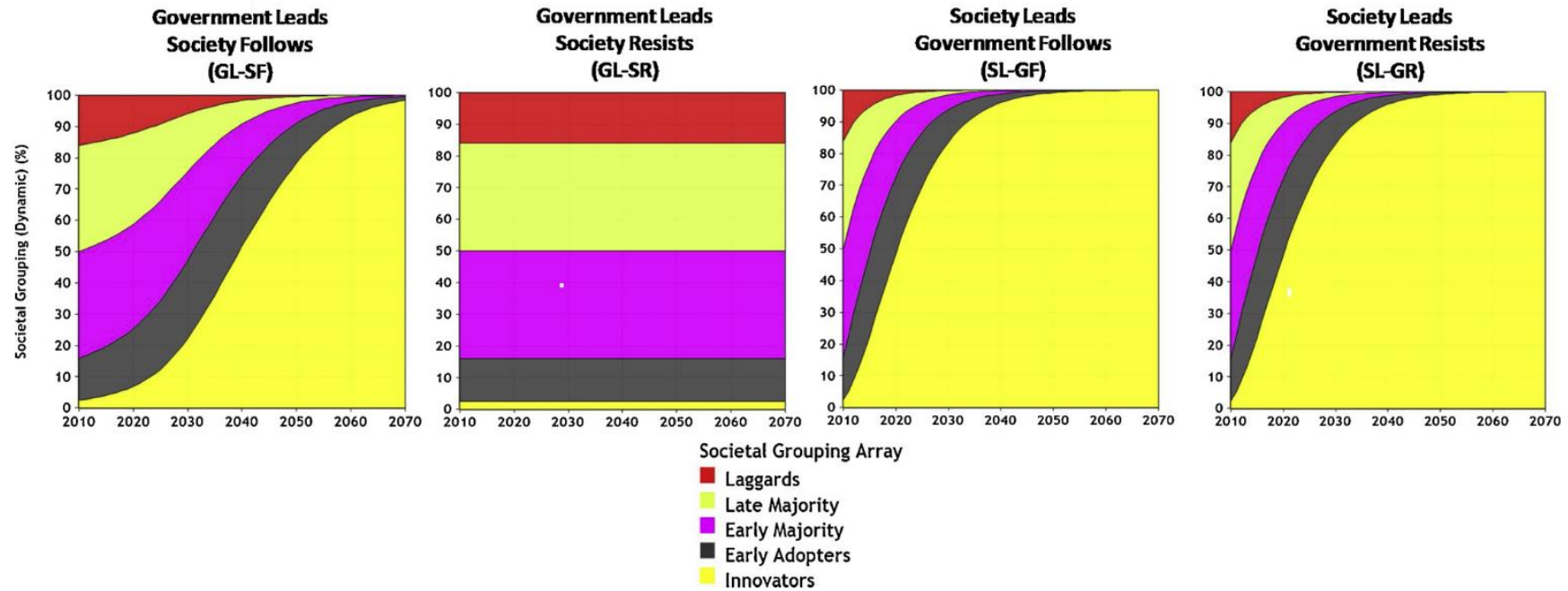


Fig. 4. Societal group distribution in different transition scenarios (average of n = 500 simulations).



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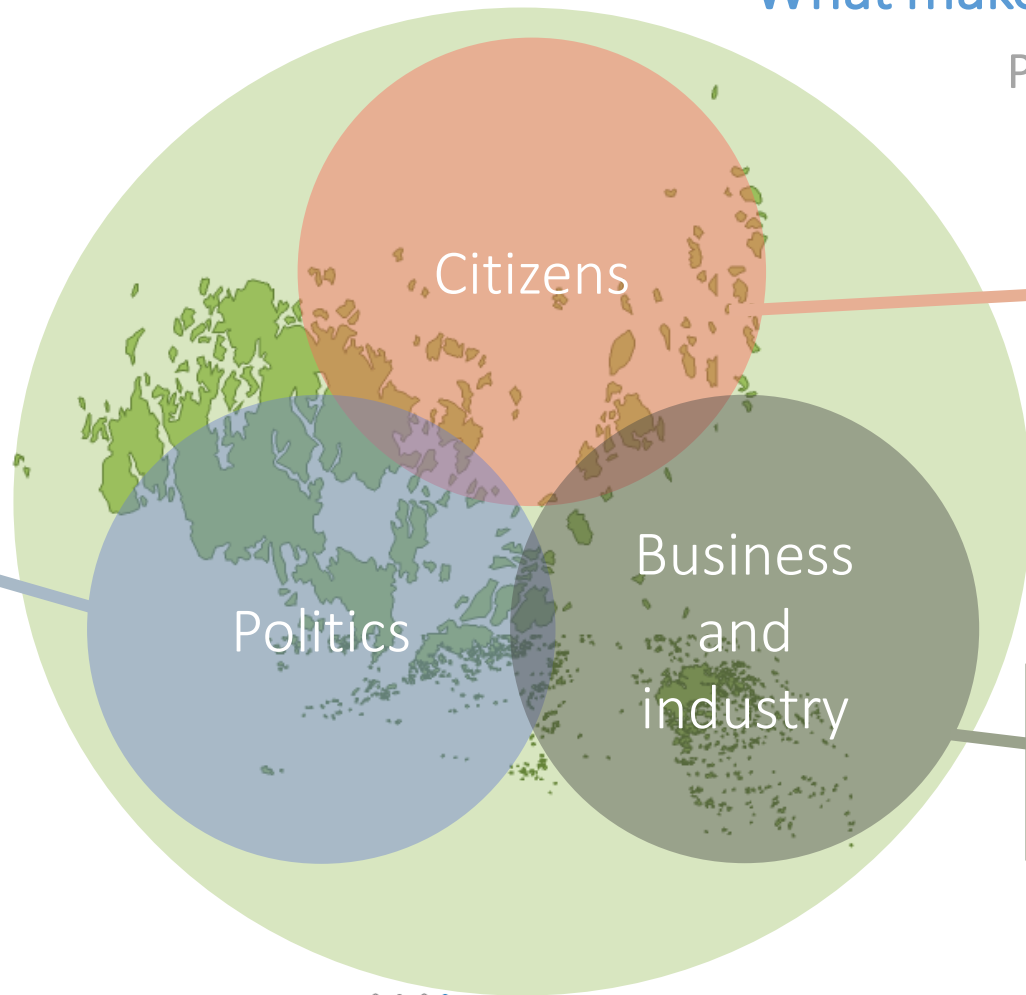


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## What makes a sustainable society?

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Policy frameworks and incentives for development, ensuring long-term societal dialogue

Consumer awareness, green economy, activism for changes in culture and habits etc

R&D of promising RES innovations and technology that aligns with needs



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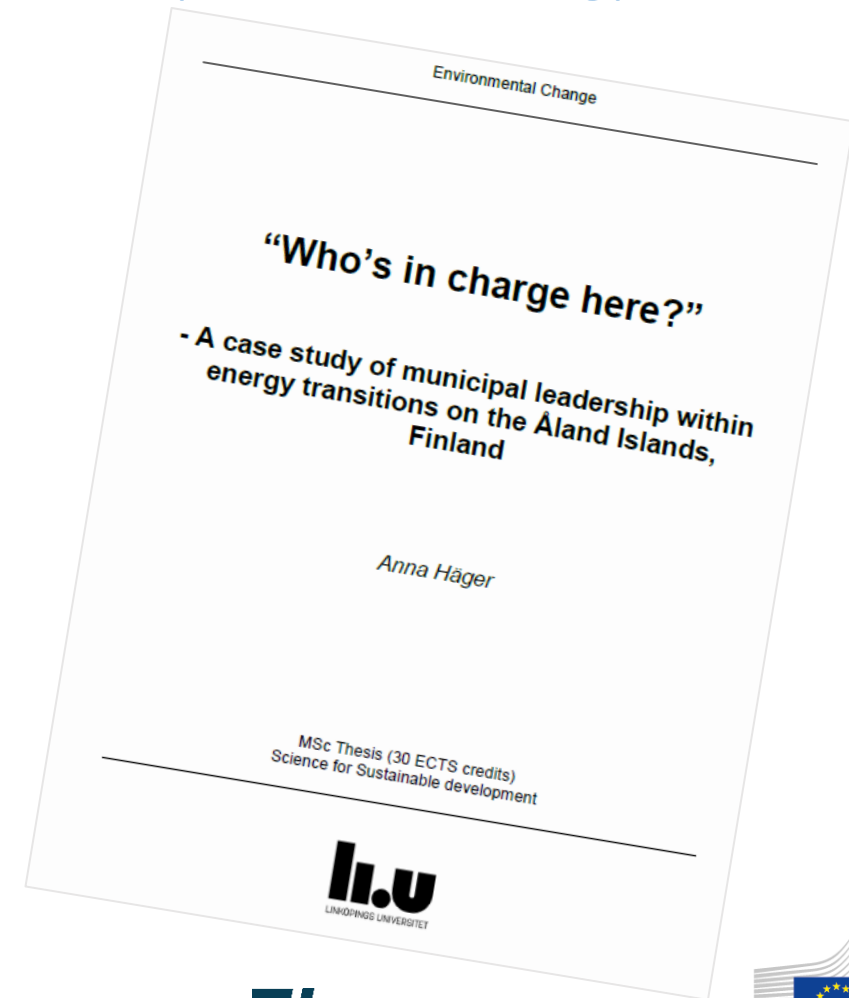
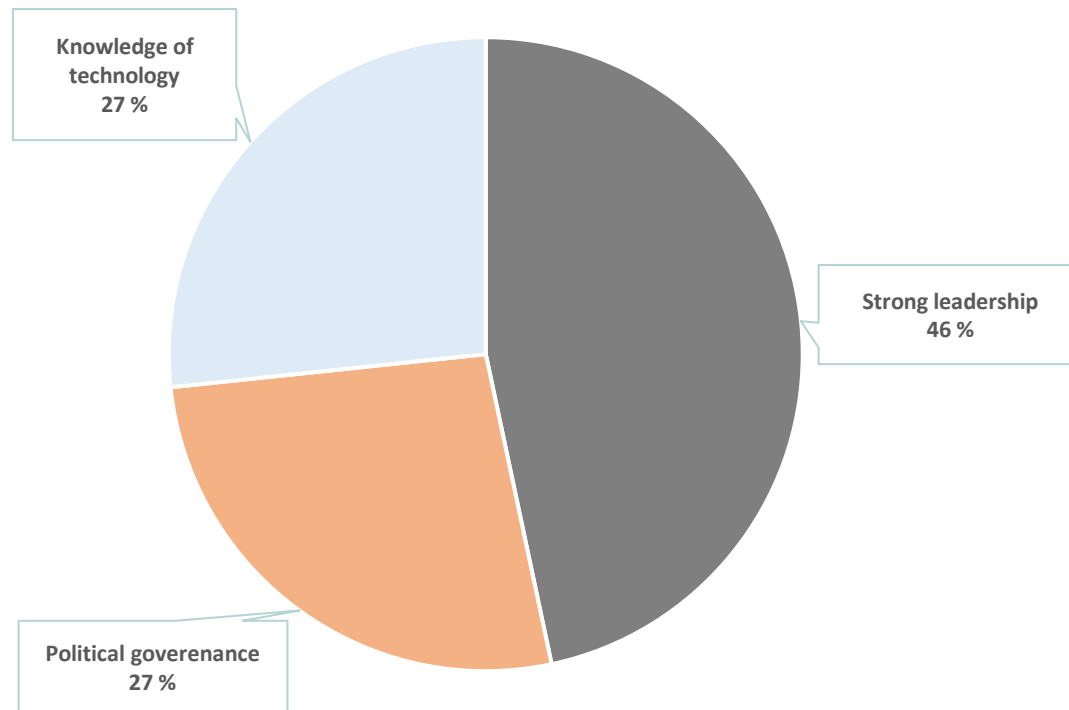


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# What is the most important aspect for an energy transition?

Survey with 15 actors in 3 different municipal governing roles (5 out of 16 municipalities)



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# Summary and take home

What we have learned



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## Take home from Åland islands

Start from the bottom up supporting leaders at all levels

- **Citizen engagement is key for any transition**
- **Transparency, especially from higher governance**
- **Long term frame work, spans over mandates**
- **Locally feasible sustainability agendas**
- **Promote and foster local leadership**
- **Ownership and inclusiveness to the transition**
- **Communication made accessible for all stakeholders**



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Thank you for listening and I look forward to further discussions.



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