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# Rogaland County's regional plan for green industries

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ESPON, Luleå, Sweden

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# Rogaland County

- 4th largest county among Norway's 15 counties
- Approx. 500.000 inhabitants
  - 14% international background
- 23 municipalities / rural/urban
- Important industries: oil and gas, minerals and metals, food, IT/technology, tourism
- Stavanger is the regional capital





# Industrial development powered by renewable electricity

- Almost 100% of Norway's electricity production is renewable
- Rogaland accounts for about 12% of Norway's electricity production
- Energy- intensive industries have historically been a significant part of the regional economy



# The European Green Deal

von der Leyen Commission

#EUGreenDeal

Norske muligheter i

## Grønne

## elektriske

DET KONGELIGE  
OLJE- OG ENERGIDEPARTEMENT

## Meld. St. 36

(2020–2021)

Melding til Stortinget

Energi til arbeid – langsiktig verdiskaping fra norske energiresurser

Kommunal- og  
moderniseringsdepartementet

Strategi

## Norske datasenter

- berekraftige, digitale kraftsenter

## FELLES ENERGI- OG INDUSTRIPOLITISK PLATTFORM

**NOU**

Norges offentlige utredninger 2

## Nett i tide

– om utvikling av strømmettet

**NOU**

Norges offentlige utredninger 2023: 3

## Mer av alt – raskere

Energikommisjonens rapport

Nærings- og fiskeridepartementet

## Norges batteristrategi

VEIKART

# GRØNT INDUSTRILØFT



Nærings- og  
fiskeridepartementet



19.06.2022

## Fakkeltog mot datasenter på Kalberg

Motstanderne av det gigantiske datasenteret som planlegges på Kalberg i Time, mobiliserer søndag ettermiddag til fakkeltog fra Brekkenuten.

## Vil dere ha ungdommen hjem? Si ja til datasenter på Kalberg!

DATASENTER: Som unge sier vi klart ja til datasenter på Kalberg. Det er vi som må leve lengst med konsekvensene av de beslutningene som nå tas. Så lytt til oss.

## Bevar Hetlandskogen

DEBATT: [Forslag til reguleringsplan for Hetlandskogen](#) ligger i offentlig høring. Jeg håper mange tar utfordringen og gir svar på høringen til kommunen, fristen er 12.05.2021.

## Så var ikke Hetlandsskogen konfliktfri likevel

9. juni lanserte Bjerkreim kommune Hetlandskogen som næringsområde for kraftkrevende industri. Nå får planene motstand fra folk som har sterke følelser knyttet til skogen.

## North Sea Energy Park vil bli et framtidig industrieventyr i Hetlandskogen

FORNYBAR ENERGI: Knappe 6 kilometer i rett linje fra den nye transformatorstasjonen i Bjerkreim ligger regionens beste tomt for kraftkrevende industri. Hvordan kan vi påstå dette?





# The function and tools of a regional development plan

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- It gives **strategic direction** to the region's development
- It **engages and coordinates** stakeholders through participatory processes and a common decision basis
- It anchors **priorities** across political parties and stakeholder groups
- Creates knowledge and common understanding of relevant topics
- ....but it is not legally binding





# Main problems the plan aims to solve

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## The global green transition

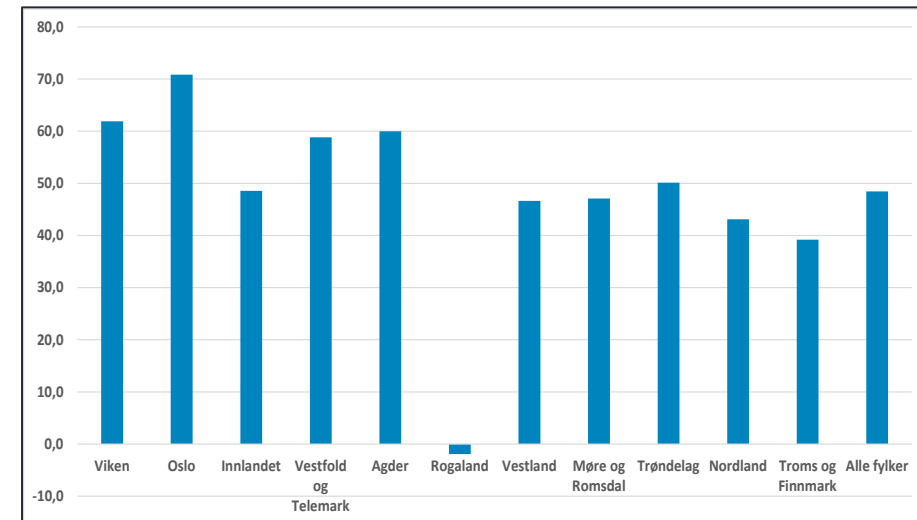
Electrification and digitalisation as enablers for decarbonisation.

## Just transition and jobs

Norway and particularly Rogaland needs to develop both new business and create more jobs

## Så var ikke Hetlandsskogen konfliktfri likevel

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Norwegian governments expected development in all counties towards 2050 if no measures are taken

## Public acceptance: a barrier to industrial development

The need for large areas of land and electricity can come in conflict with community interests and nature.



# Important issues was identified <sup>8</sup>

Which issues are we going to work with and what knowledge do we need?

- Industrial opportunities
- Attractive locations
- Power supply and energy use
- Relevant competence

What do  
We want?



How shall  
We do it?



What do we  
need to know?



# How we did it

- Developed a common knowledge basis considering:
  - Rogaland's enabling conditions
  - Available land/ location alternatives
  - The electricity grid
  - Industry's analysis and forecast
  - What competence is needed
  - Environmentalists' and community interests



**NORCE**  
NORCE Norwegian Research Centre AS  
www.norce-research.no

**Aktivitet i Rogaland relatert til ny areal- og energiintensiv virksomhet:  
Industrielle synergier, kompetansebehov og arealkrav**

Atle Blomgren og Øystein Fjelldal  
Rapport 25/2022 NORCE Helse & Samfunn



Medlem Føleheim



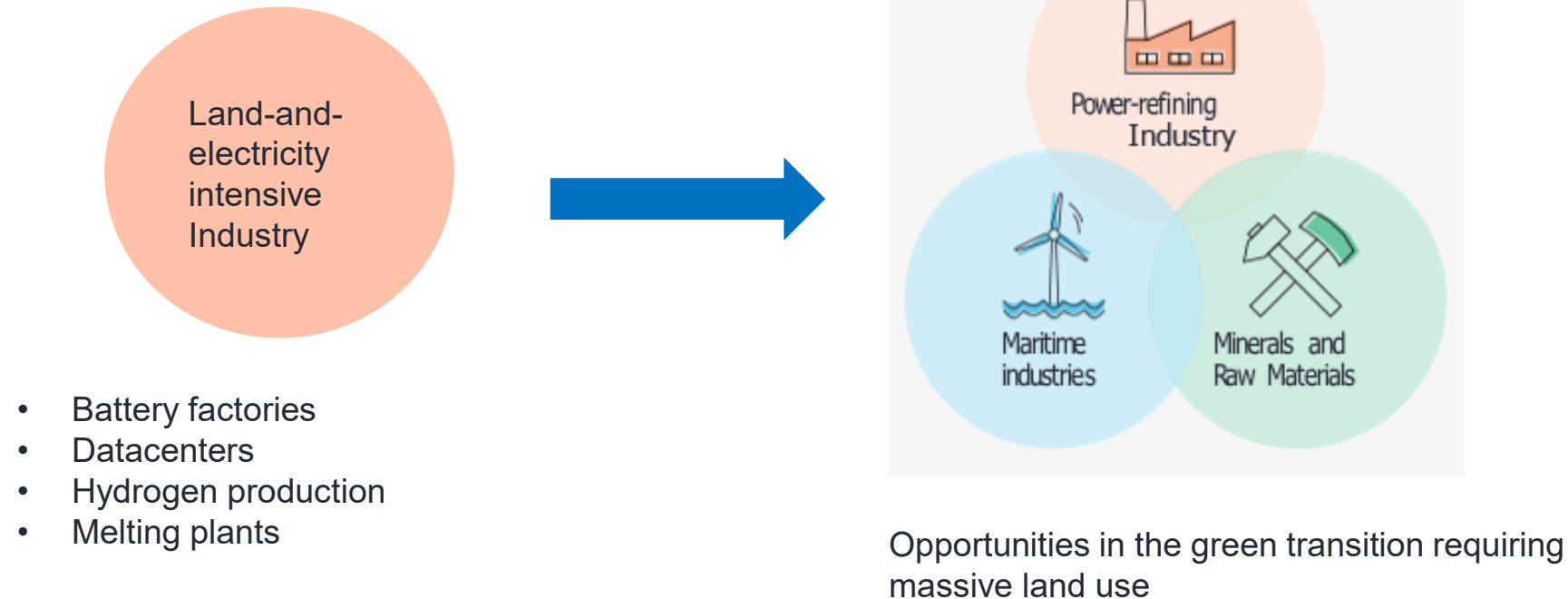
**NORCE**  
NORCE Norwegian Research Centre AS  
www.norce-research.no

**Analyse av innovative økosystem relatert til ny areal- og energiintensiv virksomhet i Rogaland**

Atle Blomgren, Øystein M. Fjelldal og Anne K. Enerstvedt  
Rapport 44/2022 NORCE Helse & Samfunn



# The outcome of the common knowledge basis directed us to expand the scope of work

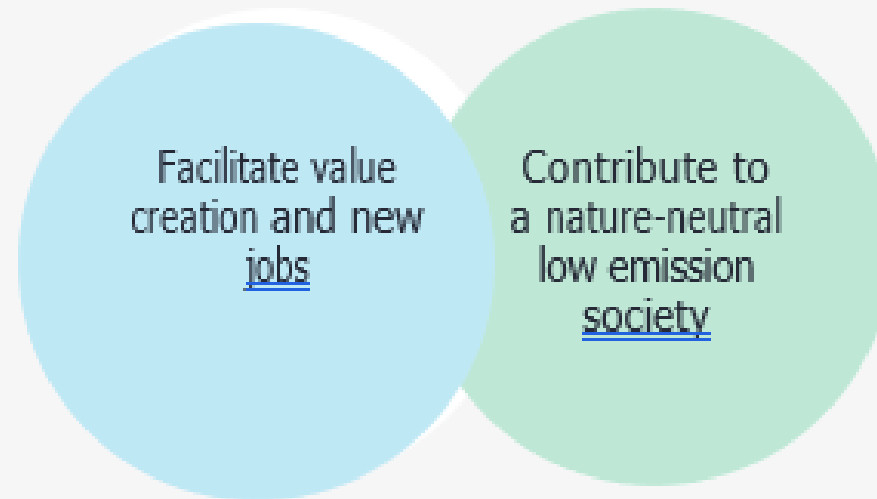




## The objective of the plan

The objective of the plan is to facilitate value creation and jobs in green industry that contribute to a nature-neutral, low-emission society.

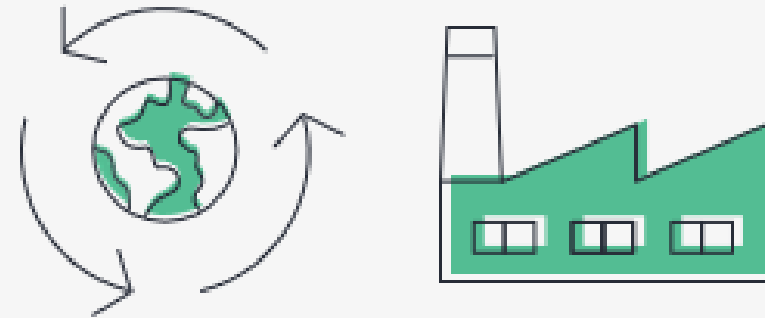
Today we have both a natural and a climate crisis. The climate crisis cannot be solved by massive degrading of nature. This requires innovative thinking and developing industrial solutions that are compatible with the planet's tolerance limit.



## Teaming up with Nature

The plan paves the way for industries that are part of the solutions for the climate and nature crisis. The circular economy increases value creation, reduces the need for encroachment on nature and enables us to get more out of our natural resources.

The need for land is limited by reusing areas already used and by designating prioritized areas for these types of activities. It is planned restoration of nature and ecosystems in areas developed/ built on.



- Circular Solutions
- Industrial Symbiosis
- Area and nature neutrality
- Prioritized Areas
- Nature restoration
- CO2 Management



## Teaming up with The Business Community

Rogaland County shall be a good host for the business community. Commercial areas have been reserved to allow for growth and circular solutions.

The public policy instruments are intended to support green development and innovation.

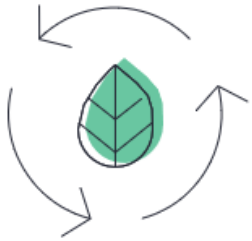
The parties in the planning work will facilitate access to labor with relevant competence.

The transport system shall take care of accessibility and the environment. The power grid shall contribute with a secure and adequate power supply.



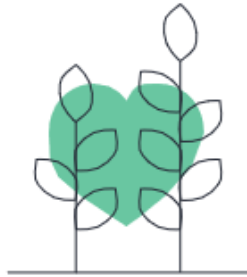
- Predictability
- Space for growth
- Support for development and innovation
- Mobility
- Labor market

# Priority measures – a holistic approach



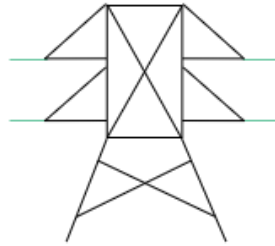
## Green Industrial development

Rogaland shall have a future-oriented and sustainable business sector with high value creation and a diversity of jobs



## Climate change and viable natural environment

The development of green industries in Rogaland will contribute to reducing emissions and protecting biodiversity



## Power supply and energy use

Rogaland will have enough renewable energy to lead the green transition, and innovative future-oriented solutions will ensure efficient energy use



## Attractive localisation opportunities

Rogaland will have an attractive portfolio of localisation opportunities for green industrial developments and their value chains

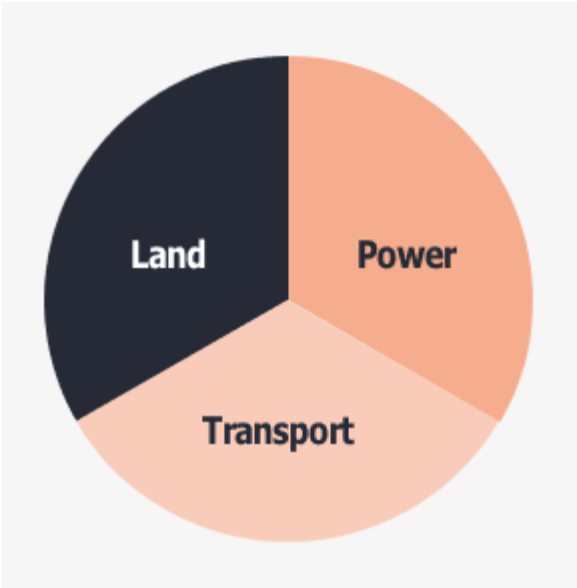


## Relevant competence

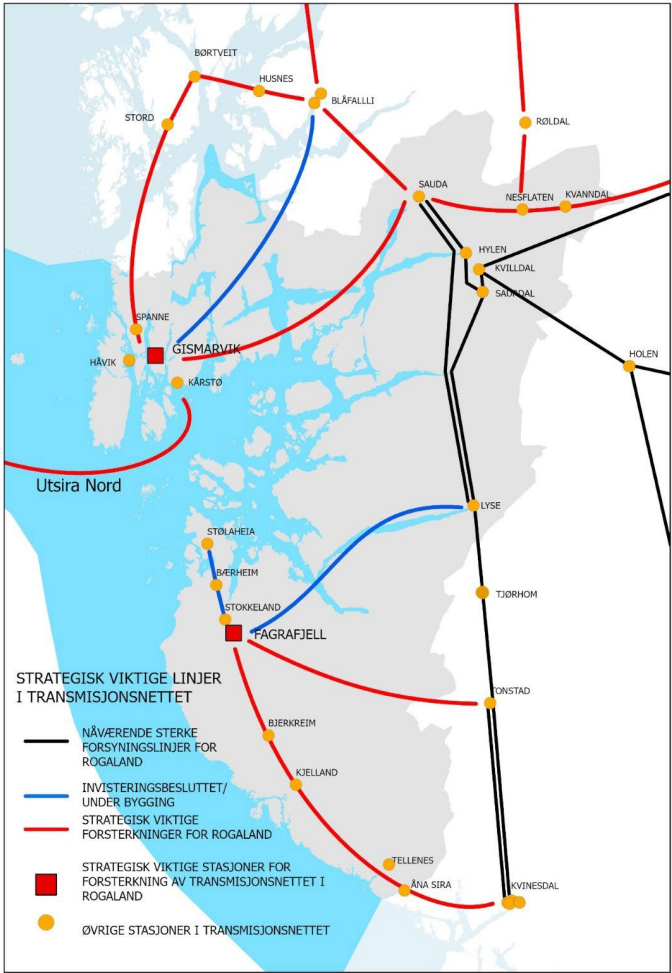
The development of green industries in Rogaland will enable the transition to a low-emission society protecting biodiversity



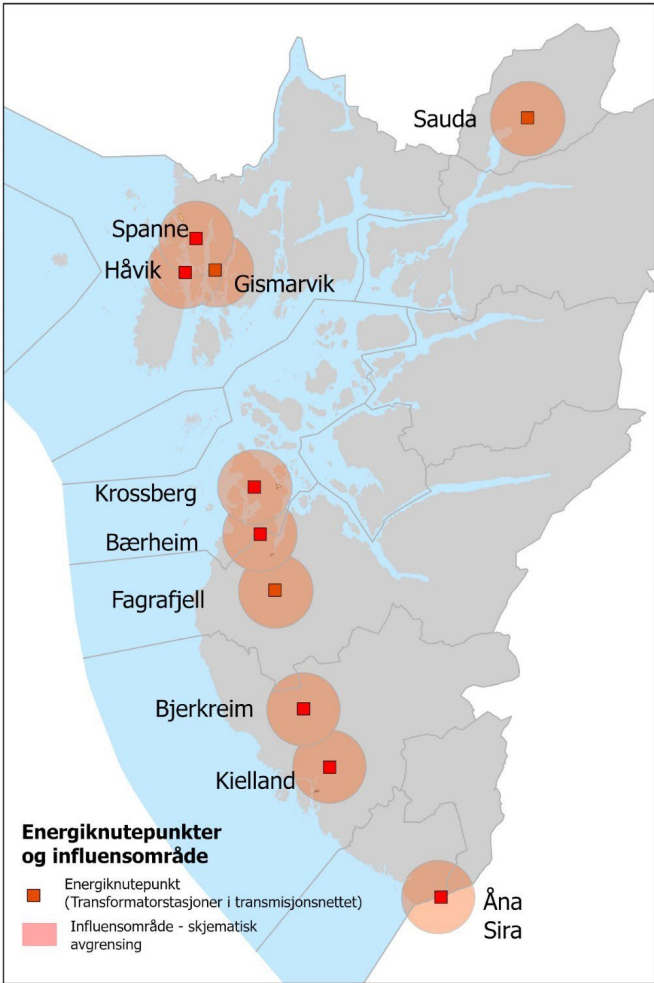
# Need for coordinated grid and land-use planning



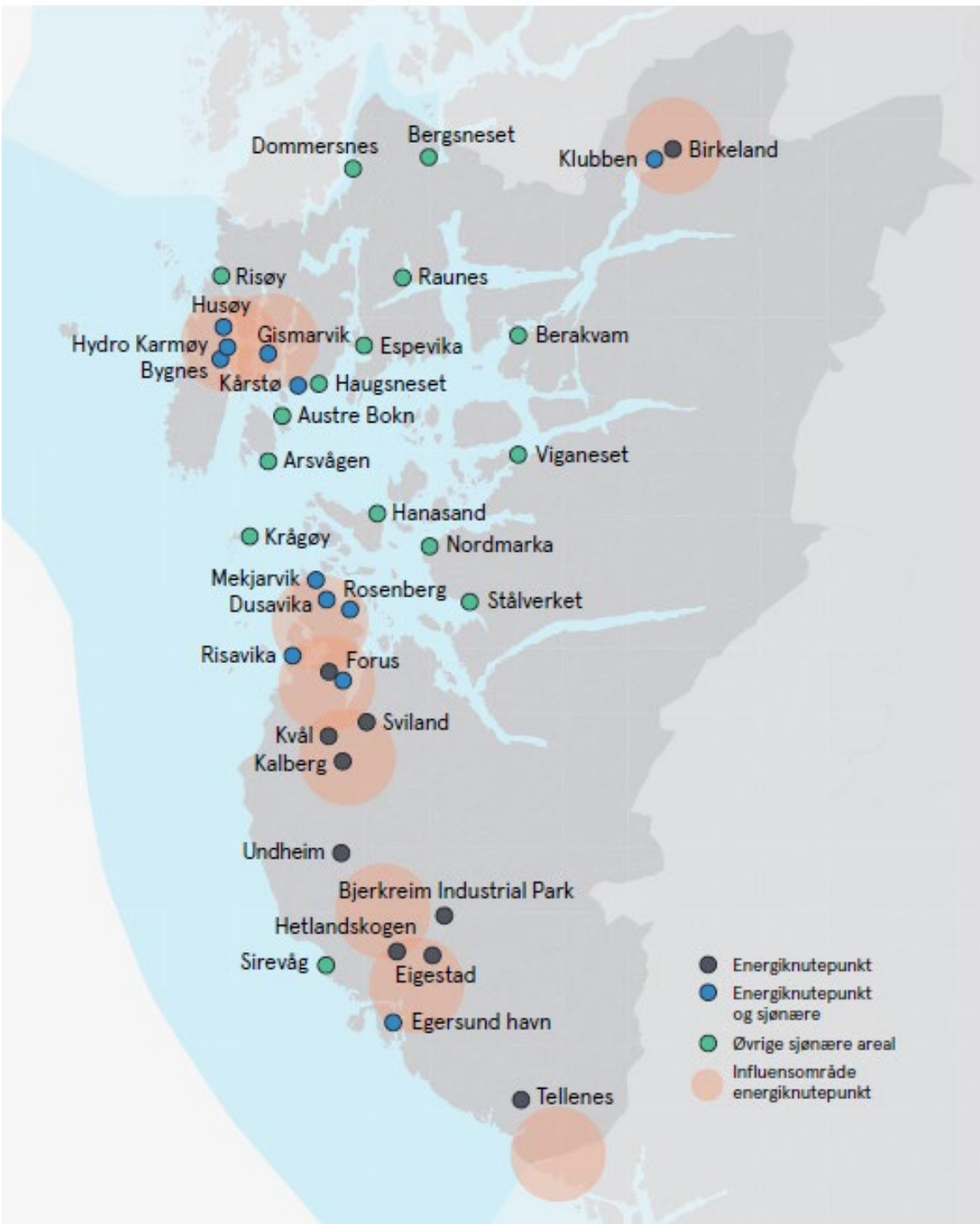
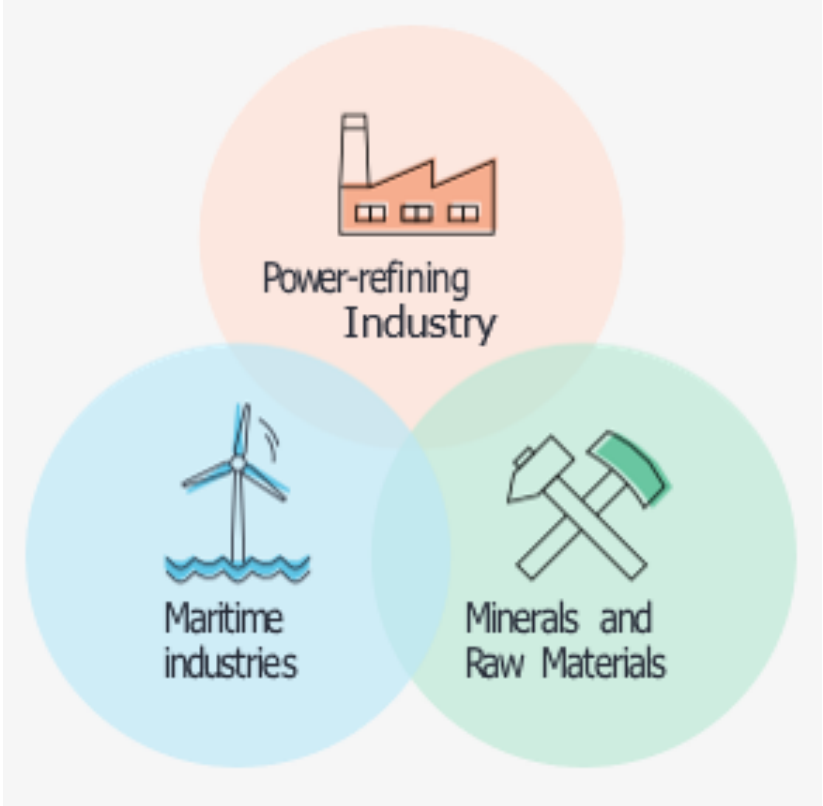
The main transmission lines



Prioritised energy hubs for developing industrial parks for land - and – electricity intensive industry



# Priority locations for green industry development





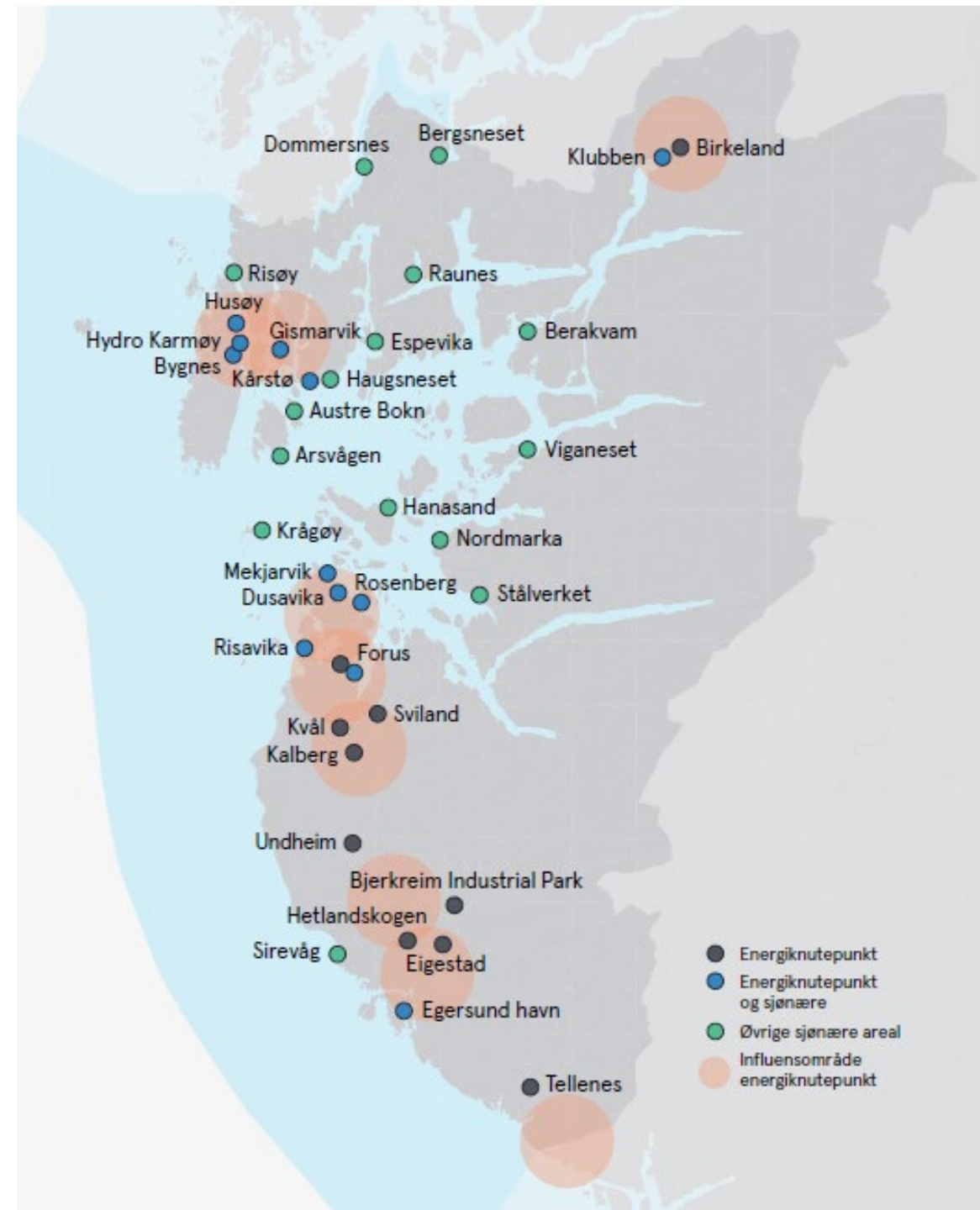
# Regional priority industrial locations

## What does it mean to be «Regional Priority»

- Public authorities agree to work together to promote industrial development within industrial parks
  - This will create a predictable environment for investments

## Clear message from the plan

- Power supply is the bottle neck, - there is enough industrial land available
  - We need to develop locations in industrial parks in proximity to infrastructure and power supply



# Action plan

Effort	When	Responsibility
1. Establishment of <del>Kraftforum</del> Rogaland	2nd half of 2023	RFK (Rogaland County)
2. Cooperation on defining areas of influence around regional priority energy hub points, as well as developing strategies for the development of the areas	By 2024	RFK
3. Gather and share knowledge about planning for circular solutions	By 2024	RFK
4. Map the potential for restoration of natural and ecosystems, including finding solutions for mitigation measures related to the degradation of agricultural land	By 2025	RFK
5. Mapping the potential for renewable energy in Rogaland	By 2024	RFK
6. Evaluation of Rogaland's overall portfolio of commercial areas	Every 4 <sup>th</sup> . year	RFK
7. Land-use accounts for types of commercial areas in Rogaland	Every 4 <sup>th</sup> . year	RFK
8. Examine how a county-wide land-use bank should be designed to safeguard goals and intentions	By 2024	RFK
9. Dialogue with national authorities on the development of a planning system that ensures coordinated land-use, <del>power</del> and transport planning	Progress	RFK
10. Dialogue with national authorities to limit <u>establishment</u> of businesses without societal beneficial purposes and local value creation	Progress	RFK

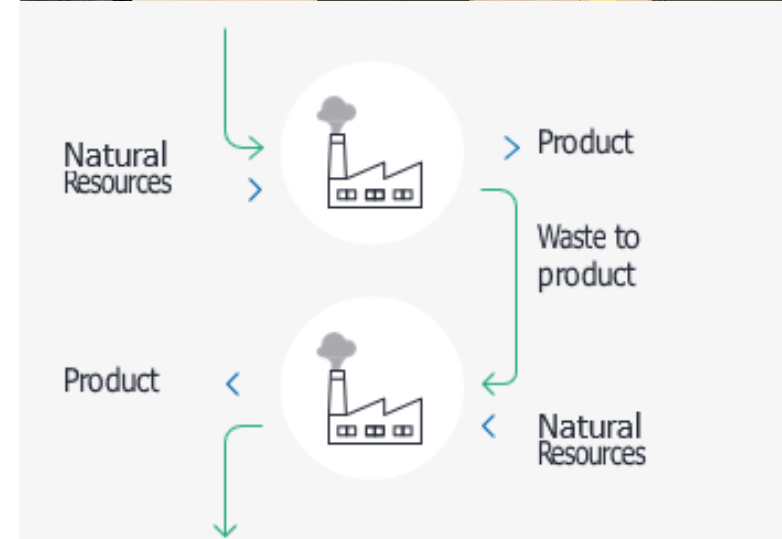


# Lessons learned

- The electricity power supply system
  - Shortage of electricity power
  - The complexity of the power system
  - Importance of the energy hubs
- Status on power supply versus good location alternatives
- The importance of dialogue and participation

## Challenges

- How to make good plans for circular solutions



# Thank you !

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