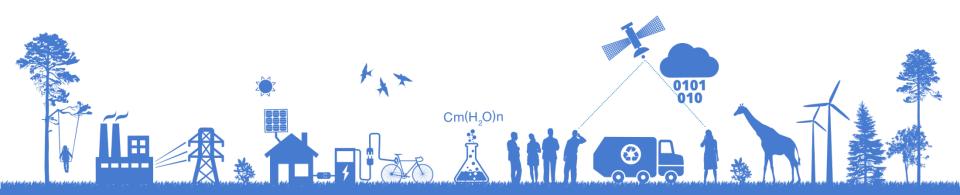


The Swedish Energy Agency's Perspectives on Marine Energy

Sara Bargi Head Sustainable power unit Swedish Energy Agency





Our mission: A renewable energy system

- National authority for energy policy issues
- Sorts under Ministry of Environment and Energy
- The Director-General is appointed by the Government
- Government funded
- Around 370 employees, Eskilstuna

Funding of energy research and innovation is part of policy to achieve a renewable energy system

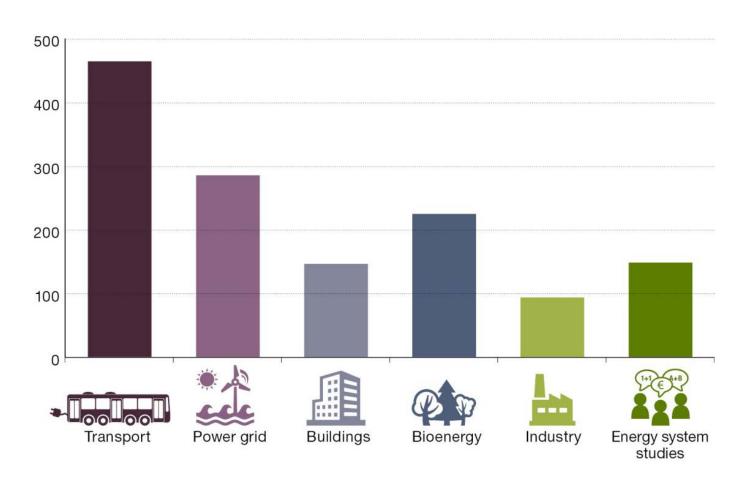


Research and innovation funding

- From basic research to demonstration
- Annual budget approximately 140 million €
- Doubled through industrial co-funding
- Some 55 programmes and 900 projects running
- In-house priority settings and evaluation of proposals

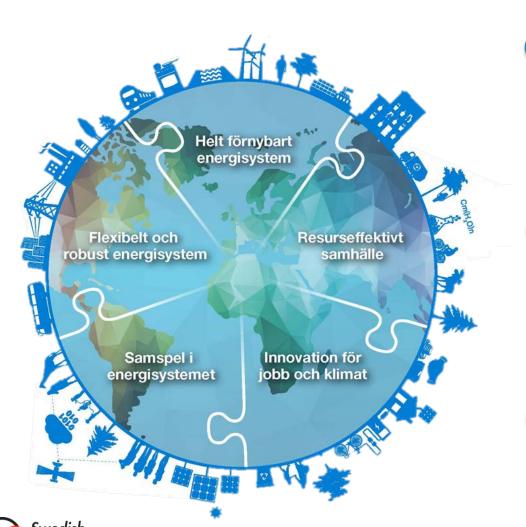


Research funding per theme area, 2014, million SEK





R&I Vision for a Renewable Power System



Sweden's electricity system supports at least 100 % renewable electricity while maintaining security of supply. The electricity system is carbon neutral, resource efficient and cost efficient

Sweden is in several areas world leading within the electricity sector and delivers knowledge, innovation and energy services on a global market

Swedish consumers, prosumers and produceras provide flexibility and make use of competitive prices

Ocean Energy Potential

Realistic potential	Wave Energy	Tidal Energy
Sweden	10 – 30 TWh/year≈ 7 % of electricity use	No potential
West Europe	420 TWh/year≈ 15 % of electricity use	48 TWh/year≈ 1.5 % of electricity use
Worldwide	4 400 TWh/year≈ 28 % of electricity use	350 TWh/year≈ 2.2 % of electricity use
	Figure 4.1 [Global offshore annual wave power level distribution (Cornett, 2008).	SMACSIC ACT STREET STR



Ocean Energy in Sweden - Stakeholders

Swedish Energy Agency

Public Funding and Interest Organisations Swedish Agency

for Marine and Water Management

Västra Götalandsregion

Lysekil Municipality

Uppsala University

Luleå Technical University

Research Organisations **KTH**

Chalmers

Bleckinge Institute of Technology

> SP (RISE)

SSPA

Technology companies

Seabased

Vinnova

Wave energy Phase: Full scale ocean demo Employees: 60-70 Location: Uppsala/Lysekil

Exim Strömturbiner Tidal / Current energy

Phase: Small scale ocean demo Employees: < 5

Location:Stockholm Corpower Ocean

Wave energy Phase: 1/2 scale ocean demo Employees: 5-10 Location: Stockholm/UK

Minesto

Tidal / Current energy Phase: Full scale ocean demo Employees: 20-30 Location: Gothenburg/UK

Wavetube

Wave energy Phase: Lab / Tank test Employees: < 5 Location: Gothenburg

Current Power

Tidal / Current energy Phase: Full scale ocean demo Employees: < 5 Location: Uppsala

Ocean Dynamic Power

Tidal / Current energy Phase: Full scale ocean demo Employees: < 5 Location: Stockholm/Switzerland

Ocean Harvesting Tech.

Wave energy Phase: Lab / Tank test Employees: < 5 Location: Karlskrona

Wave4Power

Wave energy Phase: Full scale ocean demo Employees: < 5 Location: Gothenburg

Vigor Wave Energy

Wave energy Phase: Lab / Tank test Employees: 5-10 Location: Gothenburg

SKF

ABB

Suppliers

Electricity

Supply

Companies

Seaflex Energy Systems

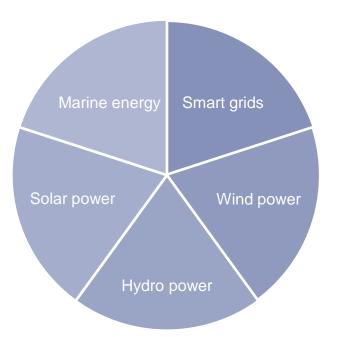
Fortum

Vattenfall

E.ON

Gothenburg Energy

R&I programme on Marine energy conversion (MEO)



R&I Objectives Marine energy in Sweden:

Improve Sweden's already solid position within research and development

Contribute to the development of sustainable electricity production systems, with the potential for implementation in Sweden and abroad

Contribute to increased collaboration between (and within) the private and academic sectors, both nationally and internationally





R&I programme on Marine energy conversion (MEO)

R&I Objectives Marine energy in Sweden:

- SEK 53 million (≈ 5 MEUR)
 2015 2018
- Call 1 2015: 7 projects funded - ≈30 MSEK (23 submitted)
- Call 2 2016: 26 projects submitted

Improve Sweden's already solid position within research and development

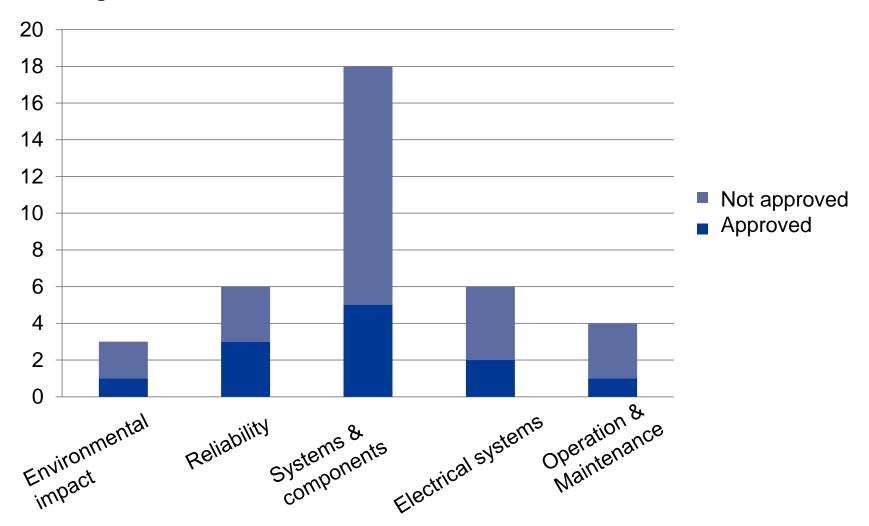
Contribute to the development of sustainable electricity production systems, with the potential for implementation in Sweden and abroad

Contribute to increased collaboration between (and within) the private and academic sectors, both nationally and internationally





Projects funded in first call





OCEANERA-Net

- 2nd call launched
- Application for cofund submitted

IEA OES

 Annex IVenvironmental issues

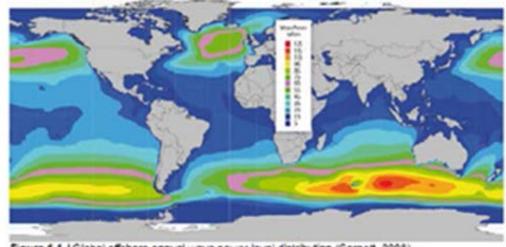


Figure 6.1 | Global offshore annual wave power level distribution (Cornett, 2008).



Thank you for your attention!

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