



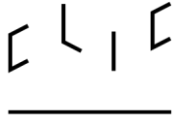
Solution Architect for Global
Bioeconomy & Cleantech Opportunities

9.1.2019

Pia Saari

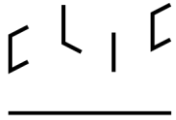
Smart Energy Åland

**Final seminar of the projects
FLEX_e demo ecosystem build-
up and CEMBioFlex**

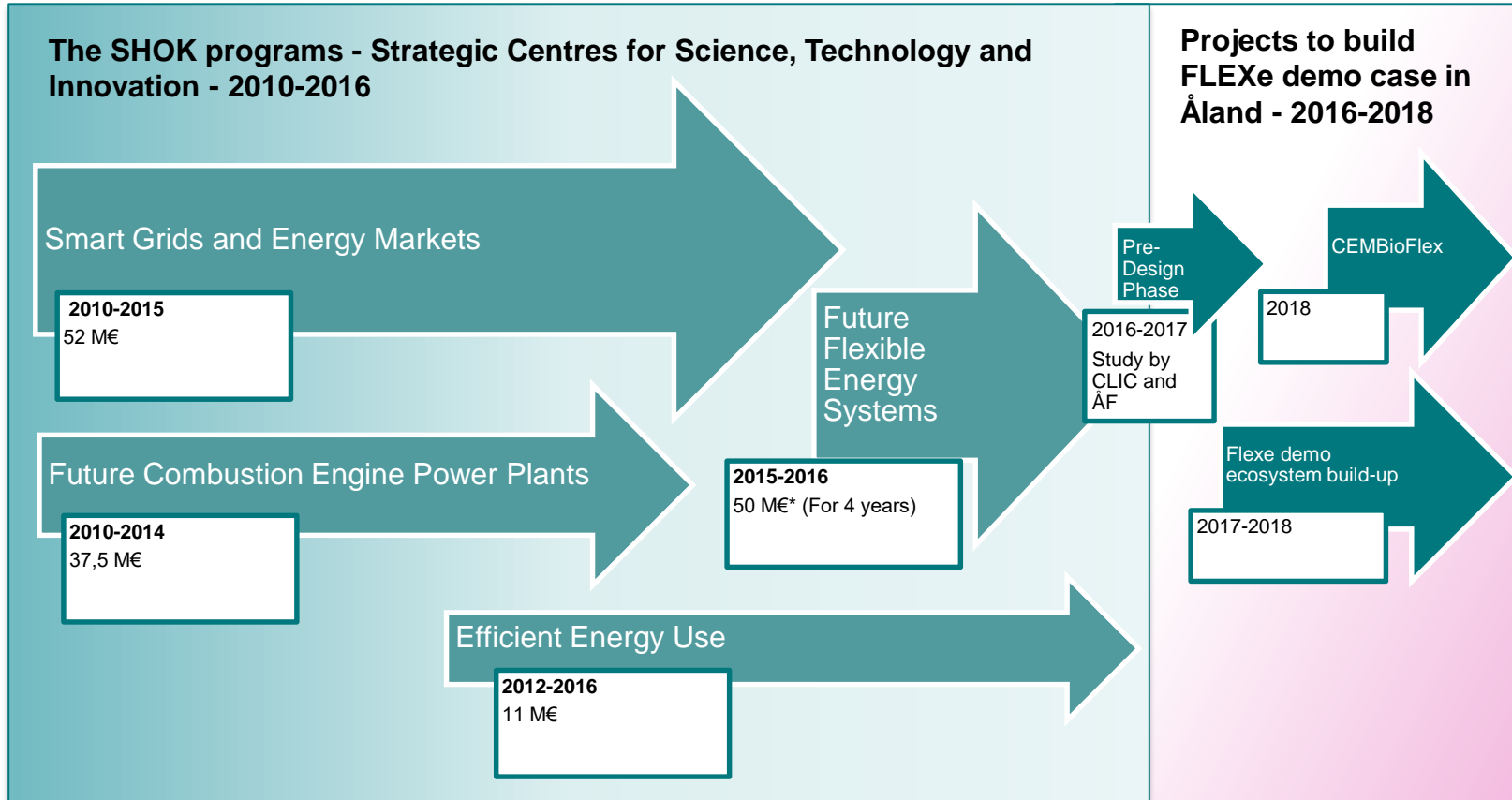


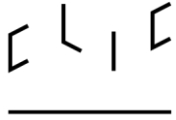
Program of today – slight changes

- 13:00 Opening of the seminar, Pia Saari, CLIC Innovation
- 13:15 Åland government greetings, Camilla Gunell, Vicelantråd
- 13:25 Key note speaker, Riku Huttunen, Director General, Ministry of Economic Affairs and Employment
- 13:35 Key results FLEXe Demo and CEMBioFlex (Kimmo Siira, CLIC Innovation Oy)
Future market Mechanisms and Integrators (Samuli Honkapuro, LUT)
Storage alternatives (Michael Gruenenfelder, Pöyry)
Transportation alternatives (Jim Häggblom, Viking Buss)
Heating and Heat Storage Alternatives (Tero Joronen, TUT/Valmet)
Overall system Model (Juha Pitsinki, Wärtsilä)
- 14:50 Coffee break
- 15:10 Panel discussion – The way forward in Åland
Q&A
- Closing remarks Berndt Schalin, CEO and Chairman of Flexens Ltd
- 16:00 End of the seminar



Research programs and projects leading to FLEX_e demo





What are we really aiming for?

IMAGINE

THE BIGGEST CHALLENGE OF FUTURE that world's largest energy systems will face due to decarbonization

CREATE

A SCALABLE SOLUTION for it

CONSTRUCT

THE PROBLEM in Åland Islands

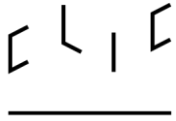
ARRANGE

FUNDING (i.e. sell the demonstration opportunity) to cover the costs of this artificial problem and its solution

DEMONSTRATE

TO REST OF THE WORLD that we have a working solution well ahead of time

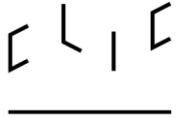
CO-CREATION WITH INTERNATIONAL PARTNERS AND STAKEHOLDERS



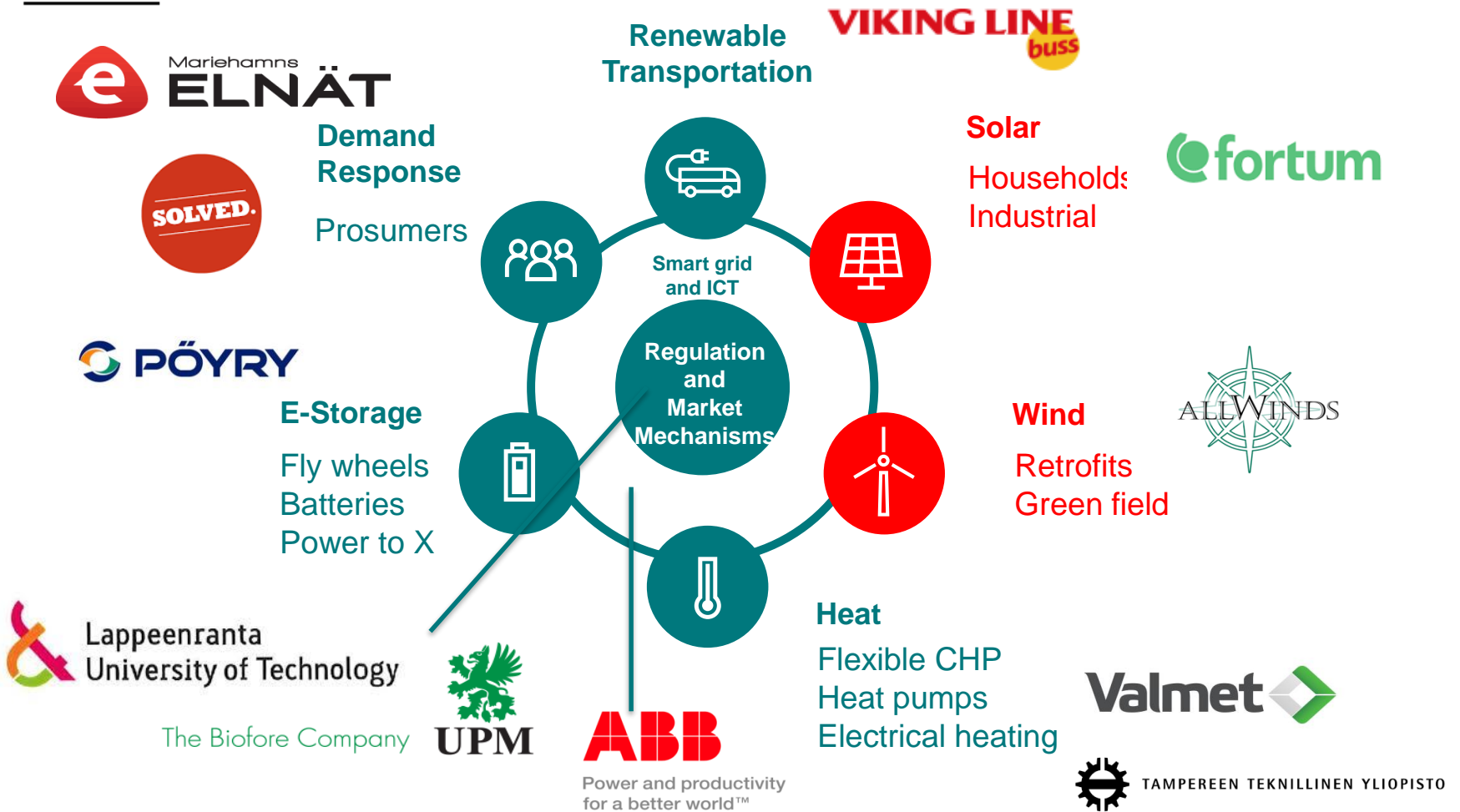
The vision: 100% RES_e Flexible Energy System

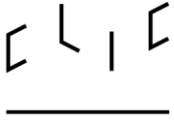
- Demonstration of scalable 100% RES_e solution in a small society scale
- Performance / availability / power based market and regulation
- Integration of subsystems, technologies and businesses on smart grid platform
- Empowerment of citizens



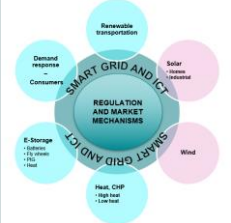


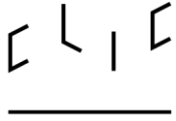
The ecosystem structure





CEMBioFlex complements FLEXe demo

	Phase I - 2017	Phase II - 2018
FLEXe demo	<ul style="list-style-type: none">• Planning and building the ecosystem (WP1)  <p>The diagram shows a central circle labeled 'REGULATION AND MARKET MECHANISMS' surrounded by six other circles: 'Renewable transportation' (top), 'Solar' (top-right), 'Wind' (right), 'Heat, CHP' (bottom), 'E-Storage' (bottom-left), and 'Demand response - Consumers' (left). The text 'SMART GRID AND ICT' is written around the perimeter of the central circle.</p>	<ul style="list-style-type: none">• Smart Grid, system design (WP2)• Regulation and market models (WP3)• Energy production, energy efficiency, balance and flexibility (WP4)
CEMBioFlex	-	2018 <ul style="list-style-type: none">• System analysis (WP1)• Bio-CHP (WP2)• E-mobility demands and potential (WP3)• CEM interface (WP4)



The ecosystem partners

