

A close-up photograph of vibrant green leaves, likely from a plant like basil, filling the background. The leaves are layered and show detailed vein patterns. The lighting is bright, creating a fresh and natural atmosphere.

Finnish Cleantech Cluster – Cleantech that makes a difference

Solutions to Global Climate Challenges

Content of the presentation

1. Finnish Cleantech Cluster programme
2. Strongholds of Cleantech Finland
3. Finnish solutions in energy and waste to energy sectors
4. Example for regional solutions: city of Lahti



Finnish Cleantech Cluster

- Lead by Lahti Science and Business Park Ltd
- Mandated by Ministry of Employment and Economy
- Target in increasing Cleantech know-how and business in Finland and internationalize the Finnish SME's
- 260 member companies, most significant universities and research institutions
- EEP will be an important tool in activities in Central America and the Andian region



Finland - #1 in Environmental Sustainability and Performance Rankings

From hightech to cleantech.

- #1 in Environmental sustainability and performance (WEF/ESI 2001, 2005; WEF/EPI 2006)
- #1 in Energy efficiency, utilization of bioenergy and biomass combustion technologies
- #1 in UN Water Poverty Index and Water Quality Indicator values

1600 companies out of which several global spearhead companies and technological leaders.



Lahti – Cleantech Center of Finland





Energy

The Global Challenge.

Global Energy Challenge

- Sustainable and clean energy production is the only way to stop climate change
- Climate change is a global challenge that will be solved with technology
- International agreements, incentives and education play also a vital role in solving the global energy challenge



Finland's Energy Solutions

Due to its energy-intensive main industries, cold climate and long distances, Finland knows energy efficiency.

- Combined heat and power generation (CHP)
- District heating
- Efficient industrial processes
- Bioenergy
- Automation (ICT) and environmental measurements; smart grids
- New innovative technologies for distributed energy production



Target is to produce 38 % of energy by renewables by 2020

- Today 28 % of energy is produced by renewables
- 70 % of this is generated from by-products of the forest and sawmill industry
- Forest industry's new focus is on biorefineries: producing liquid biofuels, mainly biodiesel and also extracting valuable biomaterials from wood.



Lahti's answer to global energy challenge

- Wood and source separated combustible waste as an energy source since 1998
- New gasification plant will enable annually 250 000 tons of waste to be utilized
- Production of biogas from sewage sludge and bioethanol from industrial residues
- Utilization of landfill gas in local brewery
- Center for renewable energy research in use in 2010



1000 new wind generators in Finland by 2020

- Wind power is the most fastest growing energy field globally
- Feed in tariff for wind power in 2010
- A large number of new wind power parks is required
- Other new technologies can be adopted





Waste

The Global Challenge.

Global Waste Challenge

Consumption challenge:

- Growing consumption leads inevitably to growth in waste
- Natural resources are consumed to a low level

Recycling challenge:

- Proper waste treatment and utilization becomes a must
- Re-use and recycling must be increased
- Uncontrolled landfill sites have severe environmental effects



Finland is in forefront of waste management

- Utilization rate of waste is about 50 %
- Target is to eliminate landfill waste by 2050
- Over 300 companies in recycling and SWM
- Innovative technologies for the whole value chain: sorting, collection, logistics and optimization, reuse, recycling and final disposal
- Especially biofuels from waste, new composite materials from waste, optimization of logistics



Lahti's answer to global waste challenge

- Municipal waste management company
- Strong public private partnership
- Source separation of waste in households:
over 90 % of waste is utilized
- Sludge is converted into biogas
- Modern waste management centre
built in principles of sustainable development



Finland is investing strongly in utilization of waste

- 40-50 new waste-to-energy projects
 - More than 10 new, large waste-to-energy plants planned
 - Several biogas, bio-ethanol and bio-diesel plants recently started, in construction or planning
- Excellent business prospects for innovative solutions



A close-up photograph of a small, vibrant green plant with several leaves growing out of a thick, bright green moss. The moss is growing on a dark, textured rock surface. In the background, a waterfall is visible, with water cascading down rocks, creating a soft, blurred effect. The overall scene is natural and serene.

Thank you for your attention!