

# E-Mobility in Finland: SWOT Analysis

## Internal Strengths

- High grid quality
- Low electricity price
- High number of heating poles and routine of plugging in cars at home
- Great ICT and electronics expertise
- Environmentally friendly attitude
- Established networks of Finnish EV enthusiasts (EVAG, e-Cars Now)

## Internal Weaknesses

- Lack of government support
- Cold climate challenges batteries
- Finnish culture of working too secretly and marketing too little
- Little general knowledge about EVs
- Little research about EV users
- Low ratings from international consultants reduce enthusiasm

## External Opportunities

- E-mobility industry's early stage, e.g. lack of international arctic EV expert
- Income currently going to oil and car companies abroad could be transferred to Finnish e-mobility cluster
- Lasting customer relationships between EV drivers and e-mobility companies enable multi time earning
- Smoother and cheaper electricity production because of smart grid solutions

## External Threats

- High prices of EVs (batteries)
- High number of e-mobility research, pilots and companies abroad
- Increase in electricity demand due to heavy e-machinery and powered building ventilation
- Lack of standards for e-mobility
- Oil companies strike back with more efficient ICE cars, hydrogen cars...
- Raises: e-prices and CO<sub>2</sub> emissions

# Porter's Diamond of National Advantage: Finland

## Firm Strategy, Structure and Rivalry

- Finns tend to produce good quality and deliver on time.
- On the other hand we tend to research and plan too long and market and sell too little
- Multiple Finnish competing companies in every part of the e-mobility value chain are good for long term advantage and performance
- Small domestic market and high labor costs encourage to go global

## Demand Conditions

- Need for heating poles has made Finland a pole expert and also demand for poles is unusually big
- Finnish consumers are tech-savvy and slow to adopt new thing so companies have to make great products
- Finns have great respect for other countries and constantly try to do all the research possible. This helps in spotting trends.

## Government

## Factor Conditions

- A small country has to innovate
- High number of skilled experts in related fields (ICT, electronics)
- Greater Helsinki is ideal for testing city solutions and rest of Finland for scarcely habituated area solutions
- There is a need for new industry to rise and be the source of inspiration for Finns

## Related and Supporting Industries

- A player of the e-mobility value chain is a commercial company inducing cost effectiveness and innovation
- Finland's reputation with global suppliers is good and we have experience from global competition
- E-mob company networks are already present

## Government's Role

- Encourage companies to raise their performance, e.g. by enforcing strict product standards
- Stimulate early demand for advanced products
- Focus on specialized factor creation
- Stimulate local rivalry by limiting direct cooperation and enforcing antitrust regulations