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Smart Grids and Energy Markets

Consumers' Small Scale Electricity Production – Expert Interview Results

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Consumers' viewpoint on the small scale electricity production

What would be required in order to make the consumers willing to invest in their own small scale electricity production?

- The focus purely on the household customers
- No emphasis on the technical issues, business models, roles of different market players, regulation etc.
- Methods: Literature review, expert interviews, consumer interviews & questionnaires
- The work is being done within SGEM Task 7.2 by the University of Vaasa

Key research questions

Identifying...

- What is the level of the consumers' awareness and interest towards small scale production? What kinds of consumers might be interested (customer segments)?
- What would the consumers expect to gain (motivating factors)?
- What would stop the consumers' interest (barriers)?
- What are the pre-requisites of the consumers (investment options, repayment period, price level etc.)?

Expert interviews

- In total **20 experts** were interviewed by phone
- A comprehensive selection of experts from electricity suppliers, DSO's, system suppliers, research organizations, and energy associations & authorities.
- The main idea of the expert interviews was to understand how the experts see the market and the consumers' expectations. The outcomes help to understand the concept and to ask the right questions in the consumer study.
- **All the results in this presentation are based purely on the expert interviews**

The Experts

Milja Aarni, Consultant, Motiva Ltd.

Jero Ahola, Professor, Lappeenranta University of Technology LUT

Markus Andersén, Sales Director, Naps Systems Oy

Olli Arola, Business Unit Director, Electricity Sales, Vaasan Sähkö

Karoliina Auvinen, Senior Lead, SITRA the Finnish Innovation Fund

Jarno Haapakoski, CEO, Volter Oy

Johanna Hanhila, Project Manager, Thermopolis Oy (Energy Office of South Ostrobothnia)

Timo Huolman, Marketing Manager, Electricity Solutions, Helsinki Energy

Matti Kantonen, Business Development Director, Finnwind Oy

Klaus Känsälä, Senior Scientist, VTT Technical Research Centre of Finland

Ina Lehto, Adviser, Finnish Energy Industries

Bettina Lemström, Senior Advisor, Ministry of Employment and the Economy

Antti Paananen, Head of Unit, Energy Market Supervision, Energy Market Authority

Antti Raassina, Sales Group Manager, Vantaa Energy

Olli Raatikainen, Business Development Specialist, New Business, Fortum

Heikki Rantamäki, Division Director, Electricity Sales, Pohjois-Karjalan Sähkö Oy

Jan Segerstam, Development Director, EMPower IM Oy

Pertti Suuripää, Managing Director, Tampereen Sähkönmyynti Oy

Markku Tahkokorpi, Chairman, Finnish Solar Energy Association

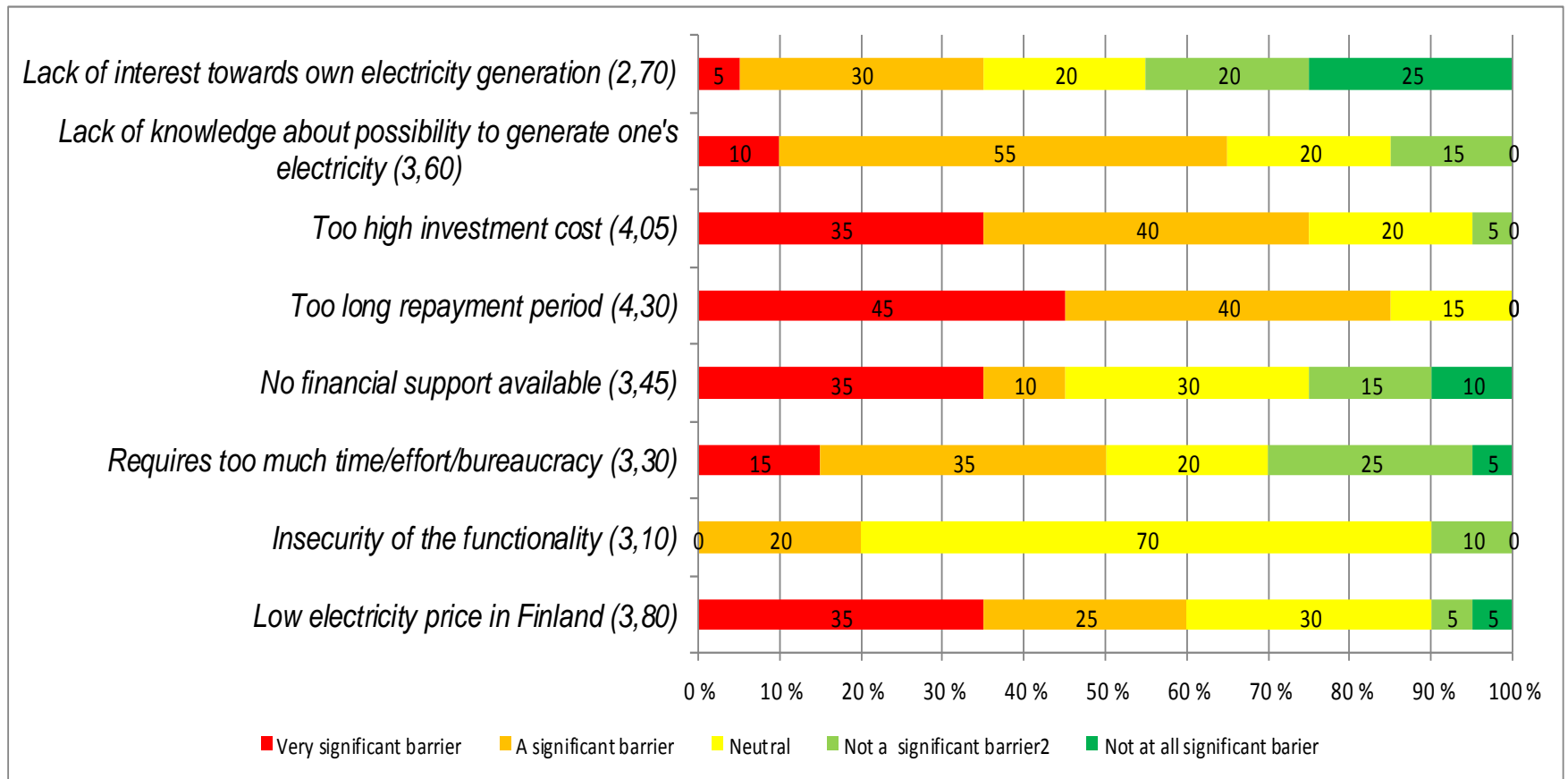
Jani Valtari, Program Manager, Cleen Oy

The Current situation of micro generation

Why isn't there more micro generation?

- **Too long repayment period**
- **Too high investment costs**
- Conventional option "too cheap" (electricity prices are low)
- Also, there is no (efficient) system for selling the excess energy.
- Lack of knowledge/information & too much bureaucracy

Barriers for consumers' own electricity generation



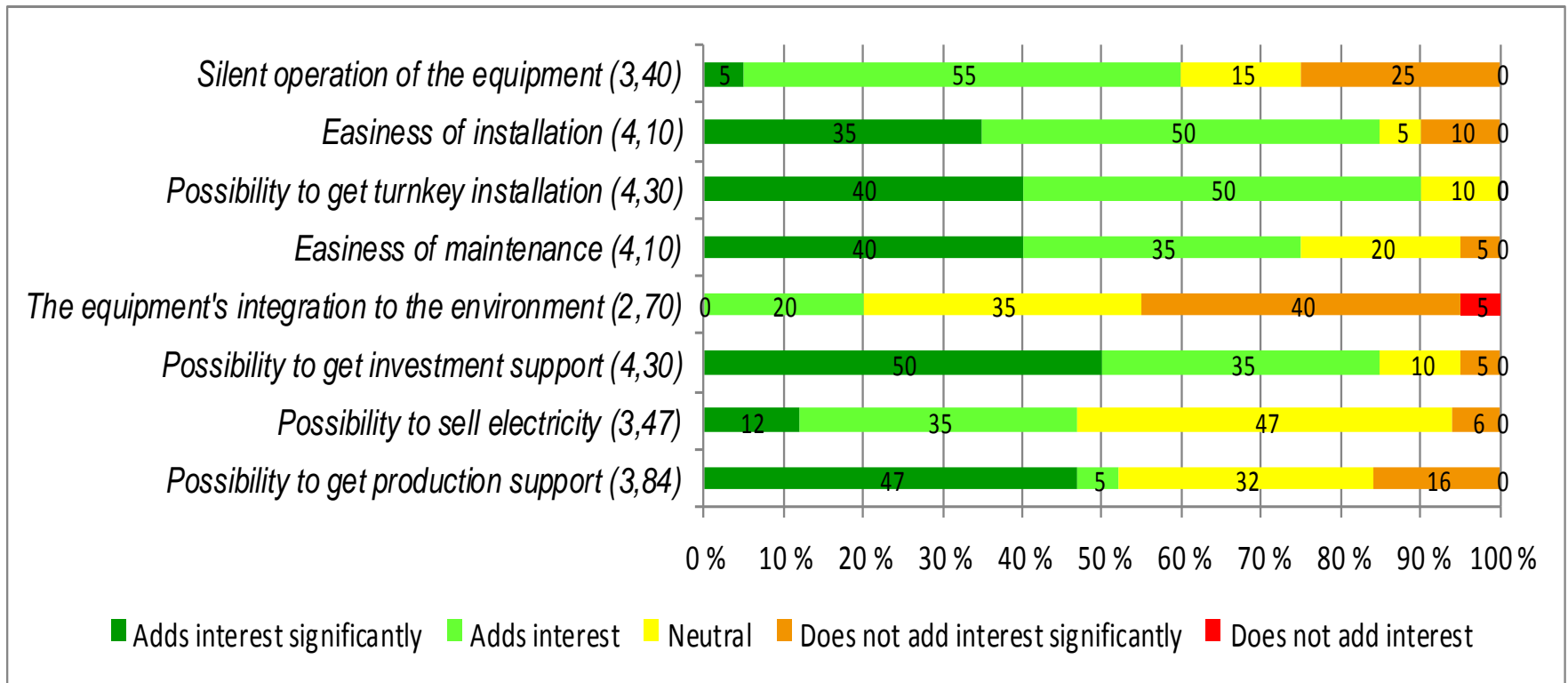
Motivating factors & prerequisites

What are the motivating factors for the consumers?

- The **monetary savings** in the long run (decreasing the electricity bill, not having to pay the taxes and distribution)
 - Energy **self-sufficiency** (especially, decreasing the dependency on the electricity company)
 - **Easiness** is key! Purchasing, installing & maintenance!
- Environmentalism is a “nice bonus” but green values are not considered to be the main motivation for the households
- Big masses would require clear, rational monetary savings, which are not yet very realistic
- Investment and/or production support would definitely motivate the consumers, but most of the experts do not consider it being a good solution

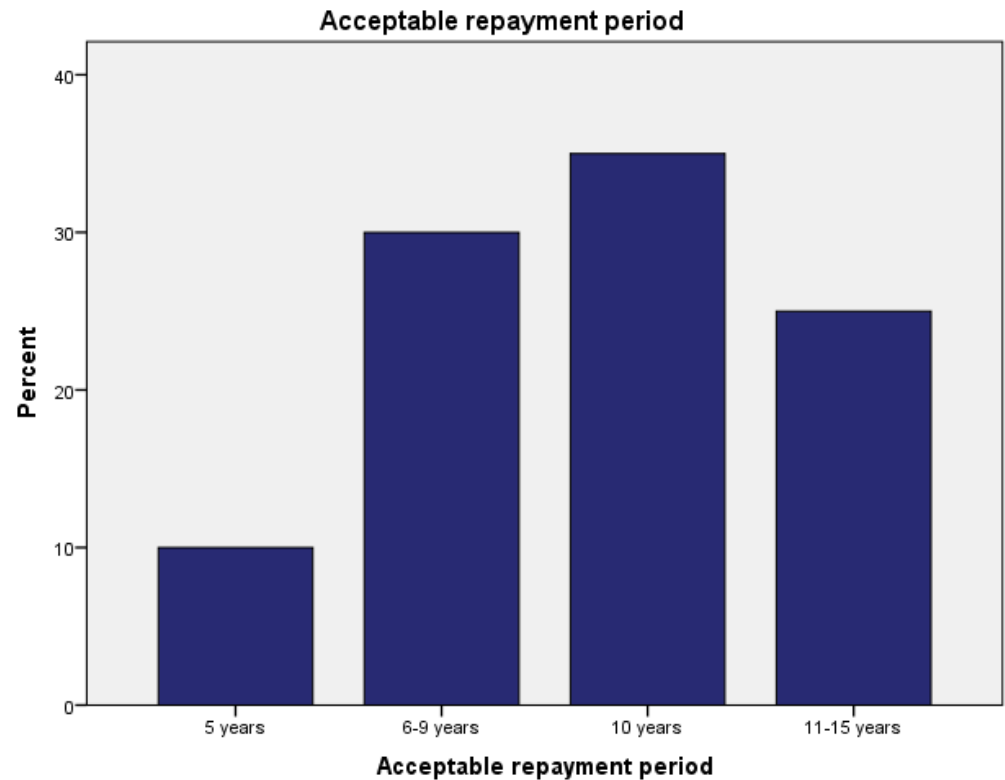
Prerequisites for consumers' own electricity generation

What could increase consumers' interest?



Acceptable repayment period

- Acceptable payment period is, according to the experts, on average **less than 10 years**.



Potential consumer segments

Some rough outlines for the most potential consumer groups:

- **Detached house** owners are the most potential target group
 - Bigger units could be more profitable, but due to the more complicated decision making, getting people involved, and legislation, it is too difficult.
- Perhaps somewhat older people, **50-60 year-olds**
- People who are **technologically oriented** and willing to try new things
- **Green values** also have an impact

+ House builders? Summer cottage owners?

Consumers' interest towards selling electricity

The experts agreed that most consumers would be mainly interested in **producing electricity for themselves** and would rather not get involved in the electricity business as such.

Also, the experts were quite unanimous about it being the most profitable for the consumers anyway; to try to utilize their own production themselves as thoroughly as possible.

However, the **possibility to sell the excess electricity** (at reasonable price) **should be an option** that the consumers can use if they wish. This is mainly about "fair play".

Future

Will consumers' small scale production be common in the future... or will it be a hobby of some marginal groups?

- **Will be much more common in future**, although not so common as in e.g. Germany.
- Technology is developing and getting cheaper → profitability is improving for the consumers
- Legislation & practices are getting more clear → bureaucracy is getting less complicated
- Of detached home owners, 10 % or more, could be realistically interested.

What should change? What is needed?

- Improved profitability for the consumers
- Less bureaucracy
- Simple instructions
- Clear information
- Easiness
- Good marketing
- Attitude change for some of the electricity companies
- Good services
- Excess electricity related problems solved

But... should there be more consumers' own electricity production or not?

Does it make sense? From the consumers', electricity market's, environment's and society's perspective???

Yes. Many pros. But let's not waste tax money!?

- Big business opportunities
 - Equipment suppliers, electricity companies, new services, jobs, domestic & international industry...
 - Demand response services
- Using renewables, global need
- Consumers' awareness about energy and consumption increases

But also some cons. Would be more efficient in bigger units? Could increase network problems?

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Thank you!