



FUEL CELL and HYDROGEN JOINT UNDERTAKING

**Stakeholder Forum
19. November 2015**

**Walter Bornscheuer,
SVP Technology Viessmann Group**

The Viessmann Group

Family business with head office in Germany

1917 Founded

11,500 Employees

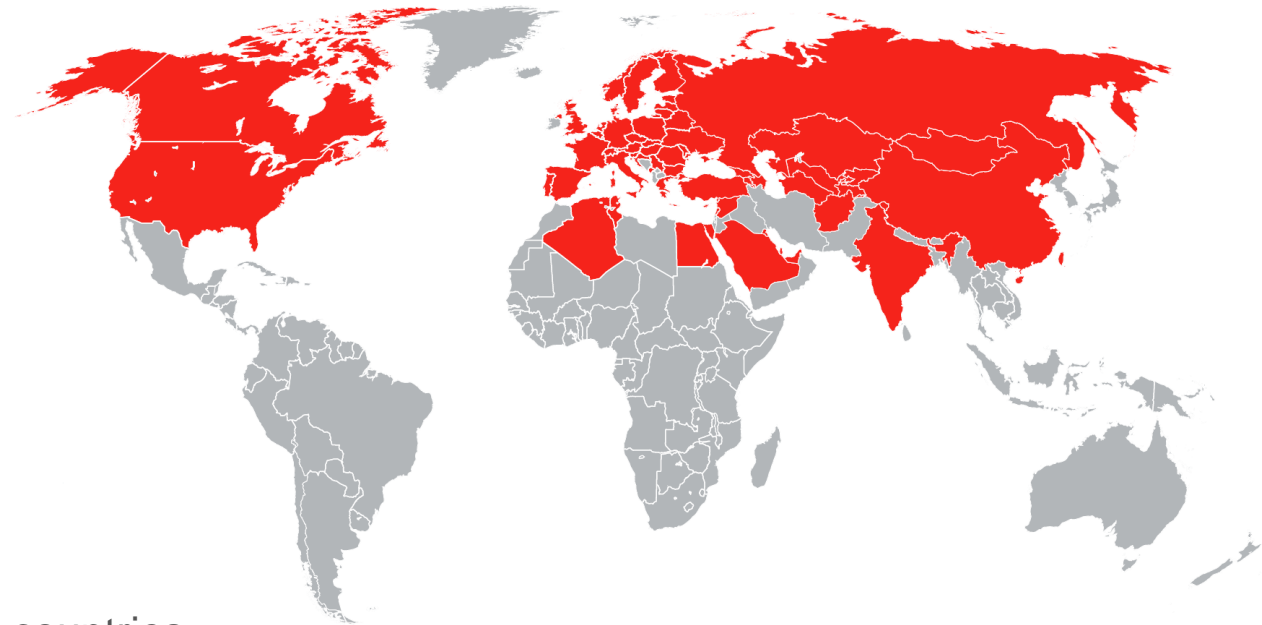
2.2 Turnover in billion €

22 Manufacturing sites in 11 countries

58 Countries with Viessmann Sales Presence

120 Sales offices worldwide

56 % International Sales



■ Countries with their own sales companies or partners

Heating systems

Efficient technologies for residential buildings and commerce from 1 to 2200 kW



- Gas and oil condensing boilers
- Combined heat and power systems; world's first fuel cell heating appliance
- Hybrid appliances
- Heat pumps and ice stores
- Wood heating systems (pellets, woodchips, logs)
- Solar thermal systems and photovoltaics, cylinders, system technology and accessories

Micro CHP

CHP-Solutions, specific for any residential Home



New

500 m³ gas / y

4.000 kWh electricity / y



Old

4.000 m³ gas / y

4.000 kWh electricity / y

Heat demand

Power demand



PEM

Fuel cell



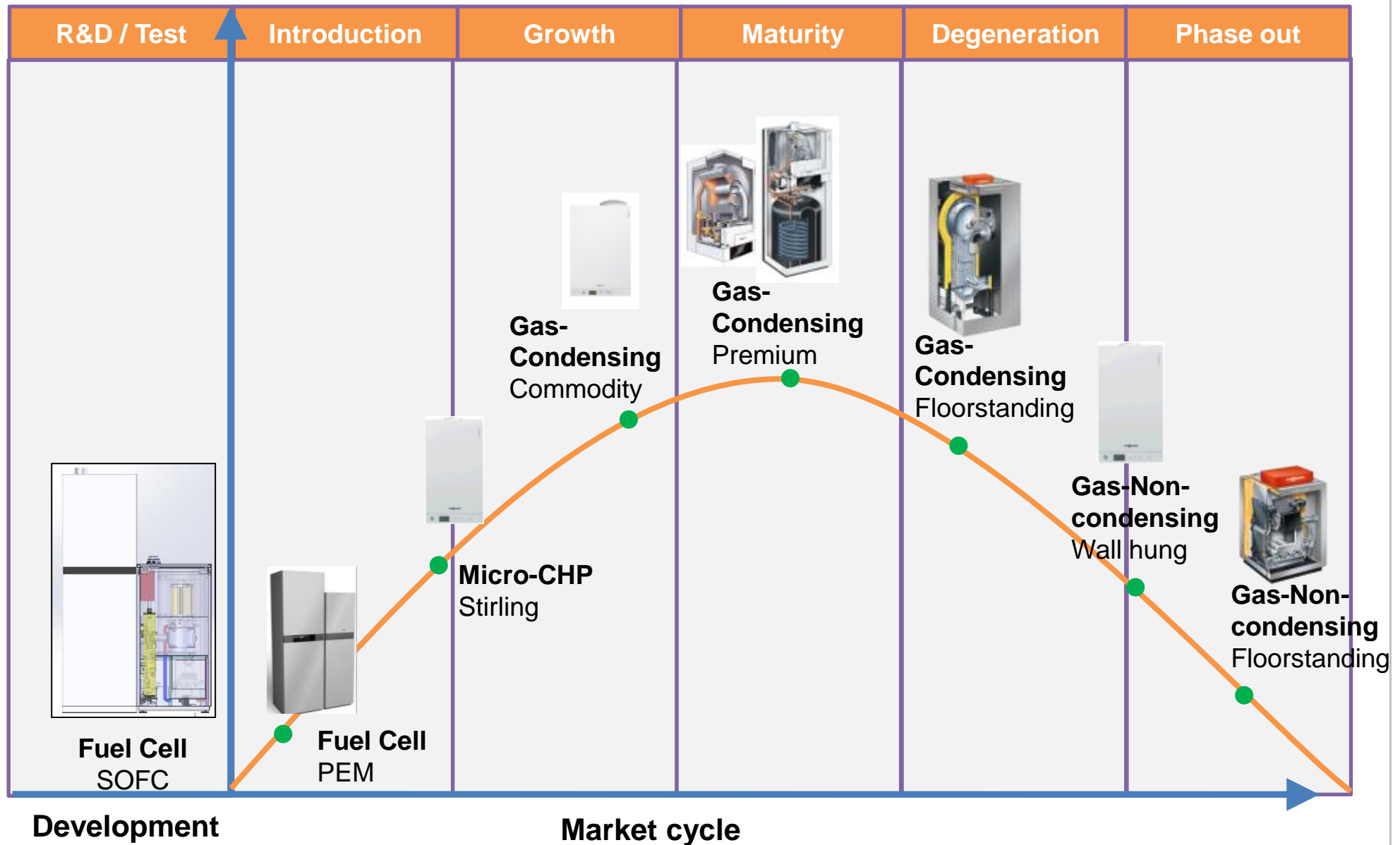
SOFC

Stirling engine

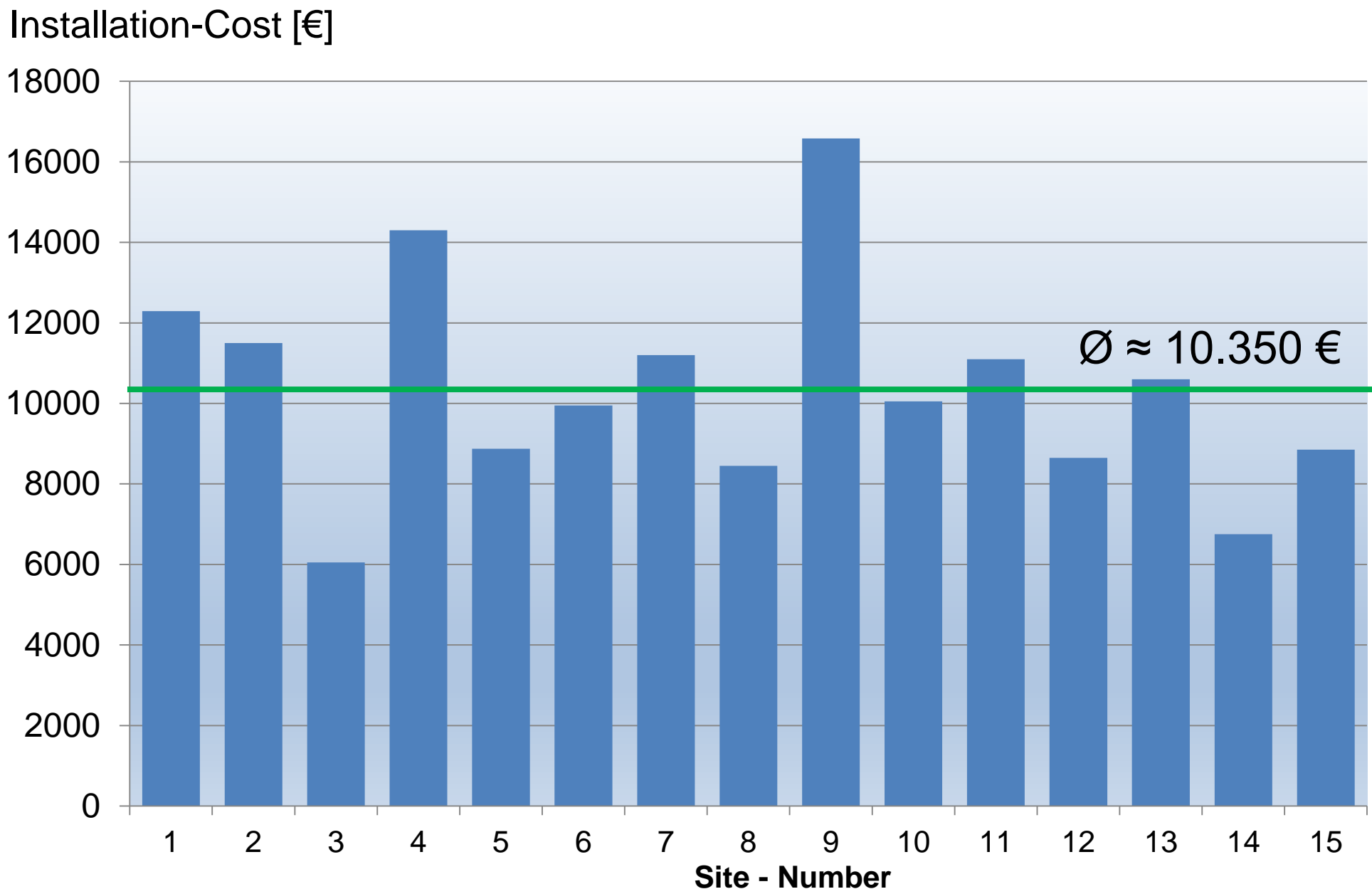


Gas Technologies

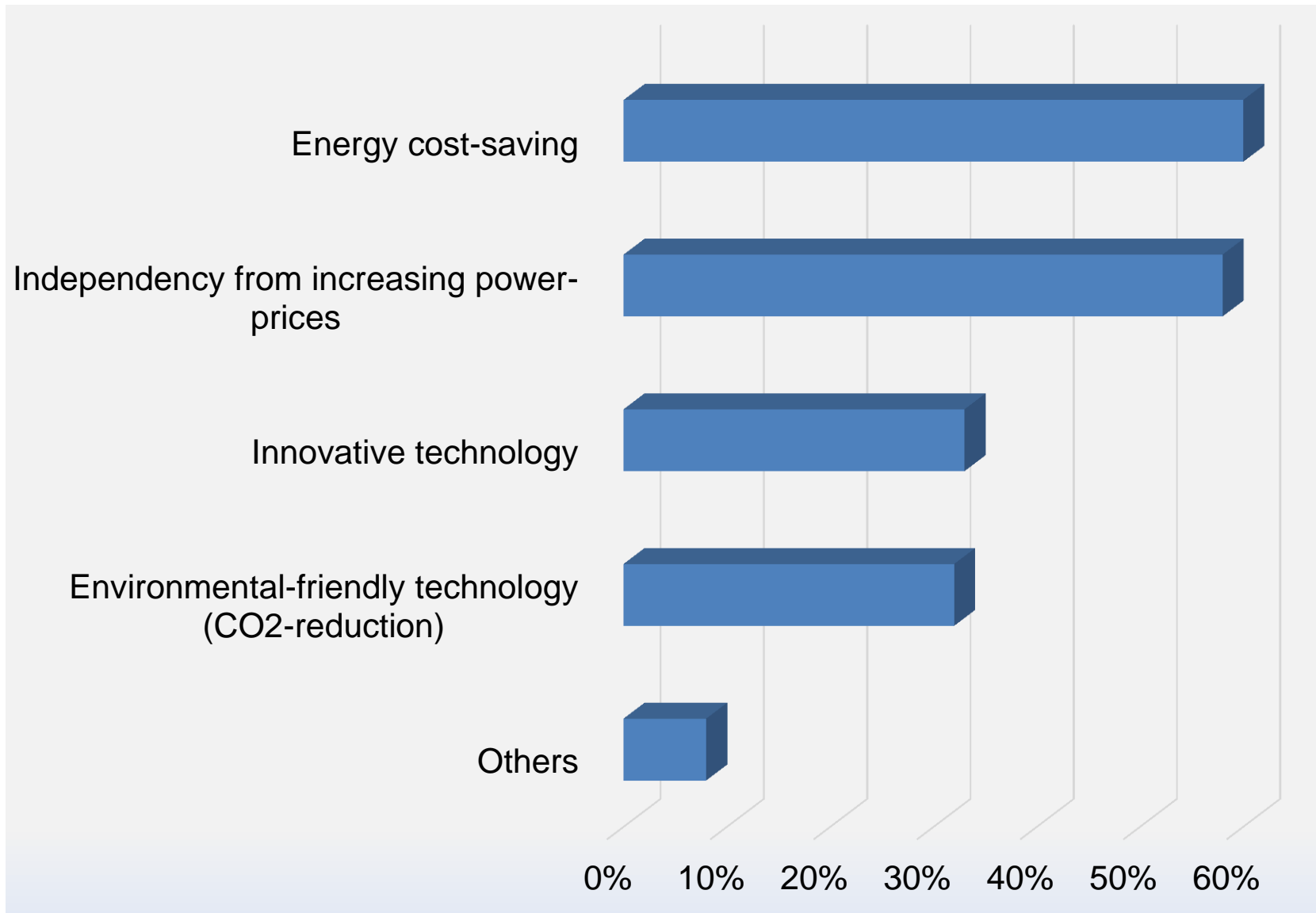
Product lifecycle, R&D and Innovation



Experience CALLUX-Project (2010 to 2014) in Germany

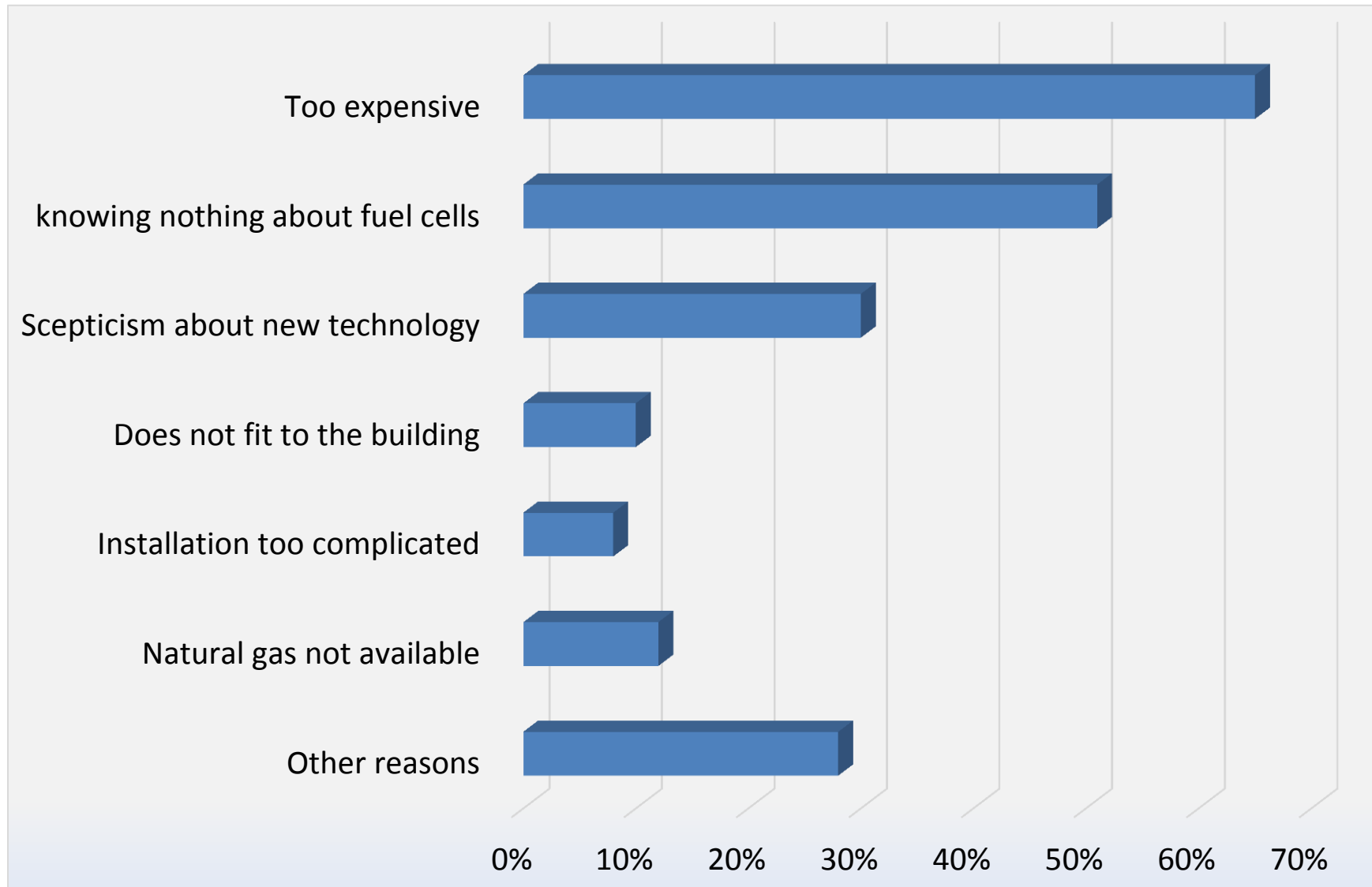


Energy-costs and independency from price-increase are the most named motivation, to decide for power-producing heating systems



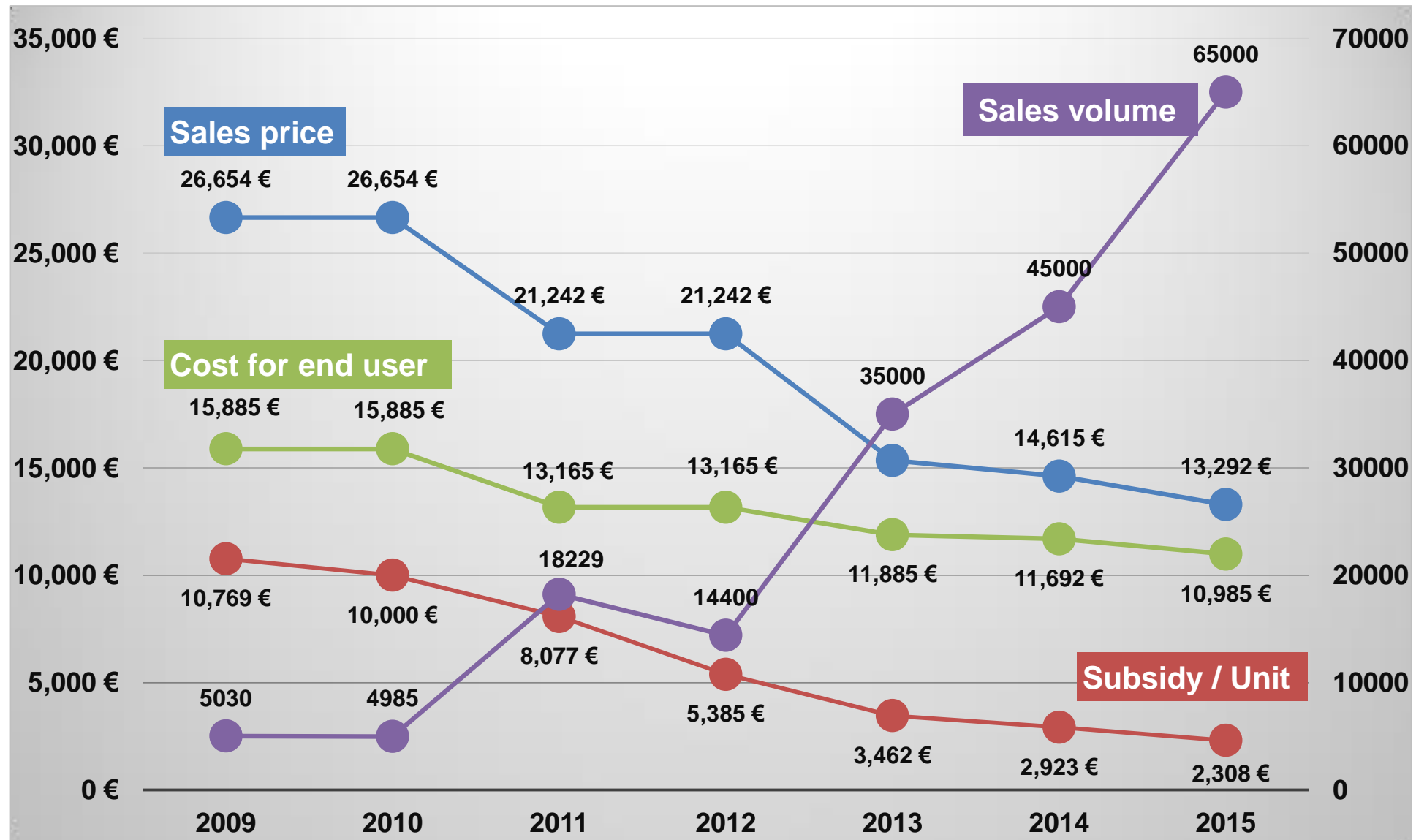
Top ranked answers of a few hundred House-owners and Installers

“Investment much too high” is the major reason, when people refuse buying a power-producing Heating-System



Top ranked answers of a few hundred House-owners and Installers

Market introduction in Japan – Success of the “ENE.FARM” program



Since 2009 nearly 190.000 units will be sold by end of 2015

What is necessary, to write a success story with fuel cells as μ CHP all over Europe

1. Industry must provide Solutions, which are easy to handle and install
2. Subsidy programs in the major European countries are mandatory.
3. Dedicated marketing and PR campaigns are necessary.
4. Barriers, which prevent fuel cells from dissemination, such as problems in administration and power feed in, have to be removed.
5. A common approach of industry, utilities and installers is necessary.



Thank You for Your Attention