

### Case of EnERgion

To initiate a network that might provide the ground for a VPP ecosystem, about 30 experts from public utilities, wind turbine manufacturing, grid operation, consulting, finance, and academia engaged in a futures and business modelling workshop (Breuer & Lüdeke-Freund, 2014a). During the workshop, these experts represented three major network stakeholders, their specific expectations and values: prosumers (i.e. energy-producing consumers, e.g. private households operating small-scale energy facilities such as solar installations), classic energy producers (such as local utilities), and grid operators.

A network vision and mission, i.e. an overarching normative orientation, were created through the formulation of a shared vision based on developing a new kind of energy region that uses green and local energy sources and makes use of new technological opportunities, such as smart information and communication technologies. Following iterative modifications and specifications of this initial vision, a “value cloud” emerged, containing key values such as independence, transparency, efficiency, and proximity. An emerging shared understanding of these key values provided an anchor for the development of different sustainable energy region concepts. Unpacking the “wicked problem” (Rittel & Webber, 1973; Waddock, 2013) of unsustainable energy, this case shows that shared normative orientations and values can serve as clues for the systematic solutions of complex problems.

Three network business models emerged during the futures and business modelling workshop (Table 6.3.3):

- “Local Energy Community”: The prosumer group considered independence from large corporations and interregional networks as one core value to pursue and education of consumers how they may trade their own energy as another. Based on this common ground they created business models for a local energy community providing a local market place for direct trading of green energy with municipal utilities managing transmission and load-frequency control. The business model included components such as a belonging to the community and fair, transparent pricing as part of the value proposition and communal multipliers as key partners for communication. Alternative financial models of cooperative equity holding and public provision or basic infrastructure were discussed.
- “Financial Equity Participation”: The group of energy producers’ defined independence, but also strived for innovation in services, in finance, and forms of cooperation as core values. Based on their ideas, a financial equity participation model was proposed. The mission was set to involve customers who strongly identify with their region and wish to support and utilise local energy sources without constructing or operating own facilities (like photovoltaic installations on their roofs). Instead of owning and operating own facilities, customers can participate through fixed-interest bearing securities with modest returns which are compensated by privileged access to sustainable energy from the region.
- “Inter-Regional VPP Agency”: The grid operator group favoured a cross-regional perspective and also values of education and innovation. Based on their ideas, the business model of an inter-regional VPP agency was described, connecting VPPs across regions and providing consulting for various energy actors. Through bundling of resources, capacities, and

competencies a real alternative to centralized energy provision and large corporations should be built that is still capable to ensure safe, stable, and efficient provision of energy on demand.

		<i>Network Actors</i>		
		<i>Prosumers</i>	<i>Energy Producers</i>	<i>Grid Operators</i>
<i>Innovation Levels</i>	<i>Normative orientations constituting a new values-based network</i>	Regional sustainability, education and independence	Regional sustainability, innovation and independence	(Cross-)Regional sustainability and education to drive innovation
	<i>Business model innovation for new virtual power plants (VPP)</i>	“Local Energy Community”	“Financial Equity Participation”	“Inter-Regional VPP Agency”
	<i>Process, Product, and Service Innovation</i>	Advanced storage technology and trade platform	Partnering in marketing, finance & operation	Repurposing consulting capabilities

**Table 6.3.3** Innovation levels, network actors, and business model innovations for virtual power plants (source: Breuer & Lüdeke-Freund, 2014a).

Finally, participants discussed potential synergies and conflicts between the emerging VPP business models. For instance, prosumers extending their production capacities within a local energy community may endanger the current core business of traditional energy producers such as regional utilities. In turn, the energy producer group proposed to harvest energy wherever it is needed, rendering transmission dispensable and thus threatening part of the grid operators’ business. The financial equity participation model envisioned by the energy producer group intends to motivate prosumers to invest in contracting services to small producers and consumers, i.e. regionally financed infrastructure contracting, value-driven by demand for green and local energy. Such multilateral contracts may serve as a pilot for new system services ensuring stable infrastructure operations through the balancing of fluctuations in supply and demand. Again, this would pose a significant challenge for the grid operators’ core business and their traditional capabilities. Still, moving up the value chain and looking at the whole energy business ecosystem, the grid operator group identified market potential for an inter-regional VPP agency in the moderated exchange of resources and know-how across regions.

### Questions (chapter 6.3)

1. “Wicked problems” are societal problems that are extremely difficult or even impossible to solve, according to the theory of Rittel and Webber. Please discuss in how far shared values provide an effective means to address or mitigate this type of problem?
2. Try to use the theoretical framework of the values-based view introduced in chapters 2 and 3 of the text book to find support for your arguments for and against values as a means to address “wicked problems”.
3. Find another practical example of values-based network innovation. Are values made explicit in these cases? If not, could the networks’ ties and performance improve if values are made explicit and if shared values are elaborated upon as a common ground?