



Institute for Advanced Sustainability Studies
IASS in Potsdam Germany

Engaging The Public In Energy Issues

Design of a new exhibition on the energy transition, sustainability, and Smart Grid

Ilan Chabay, Ph.D.

Senior Fellow, Institute for Advanced Sustainability Studies, Potsdam;
Professor, Helmholtz Alliance Energy-Trans, University of Stuttgart,
Germany

Purpose and design of a new mobile exhibition
Roles of three types of stakeholders
Exhibition Content
Smart Grid Game
Lessons to be learned

Colleagues On This Project



Project is part of the Helmholtz Alliance Energy-Trans
Exhibition design was done in collaboration with

- Professor Ortwin Renn
- Frank Ulmer

Game analysis and agent-based modeling:

- Huijie Li

Design and operation of the Expedition N Mobile is
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Purpose of Mobile Exhibition

Increase stakeholder awareness and understanding of

- basic concepts of energy and power
- energy sources, storage, materials, and uses
- three roles in energy supply and use
 - consumer
 - supplier
 - regulator
- essential connection with sustainability
 - tradeoffs are unavoidable and all have consequences
- decreasing and managing energy consumption
 - individual actions - efficient appliances, home insulation
 - collective actions - smart grid and coordinating actions

Stakeholders In Energiewende

Engage diverse publics

- policy, regulation, business sectors (all as consumers, too)
- heterogeneous civil society

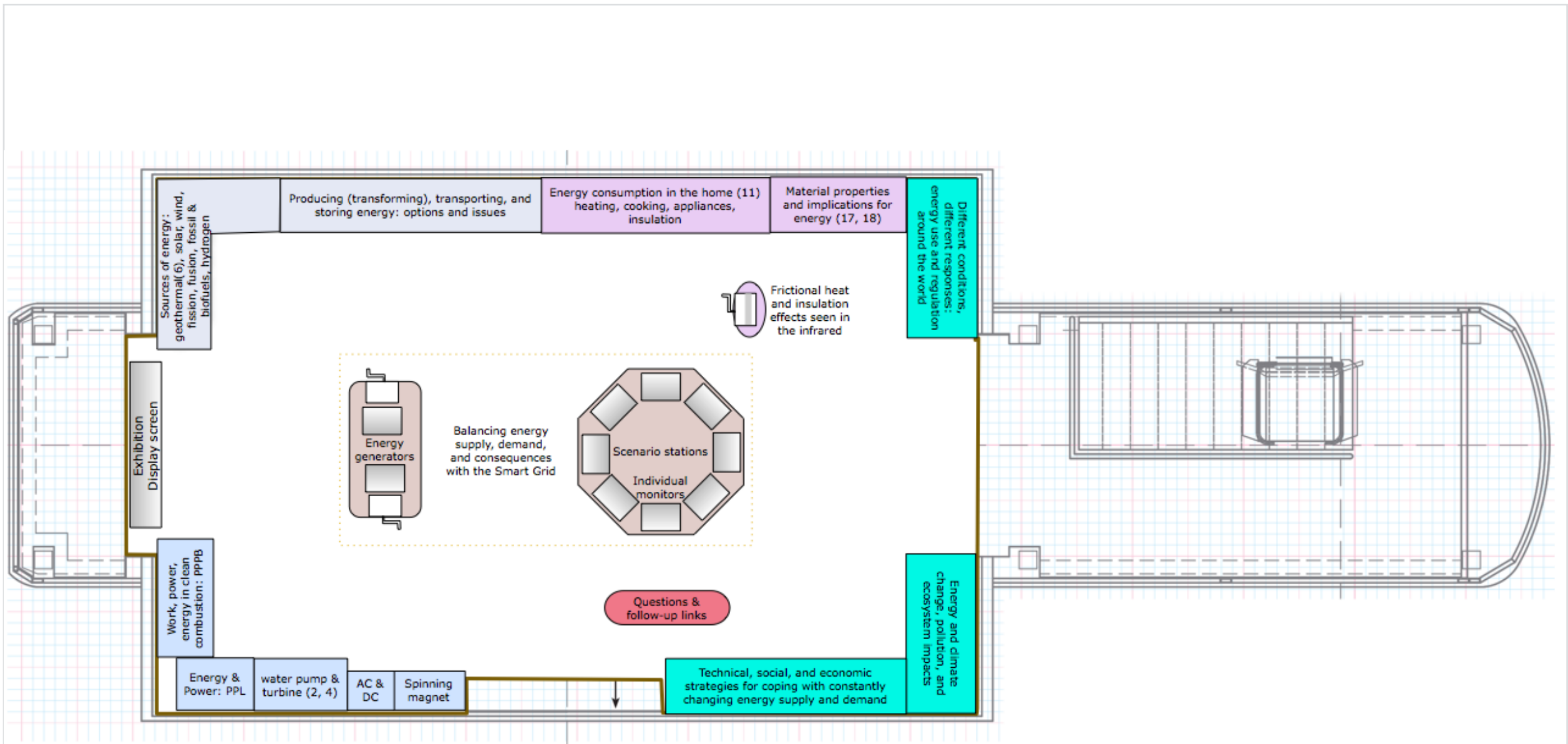
Provide foundational information for

- making meaning - learning and understanding
- making decisions - policy and practice

Stimulate visitors' own questions

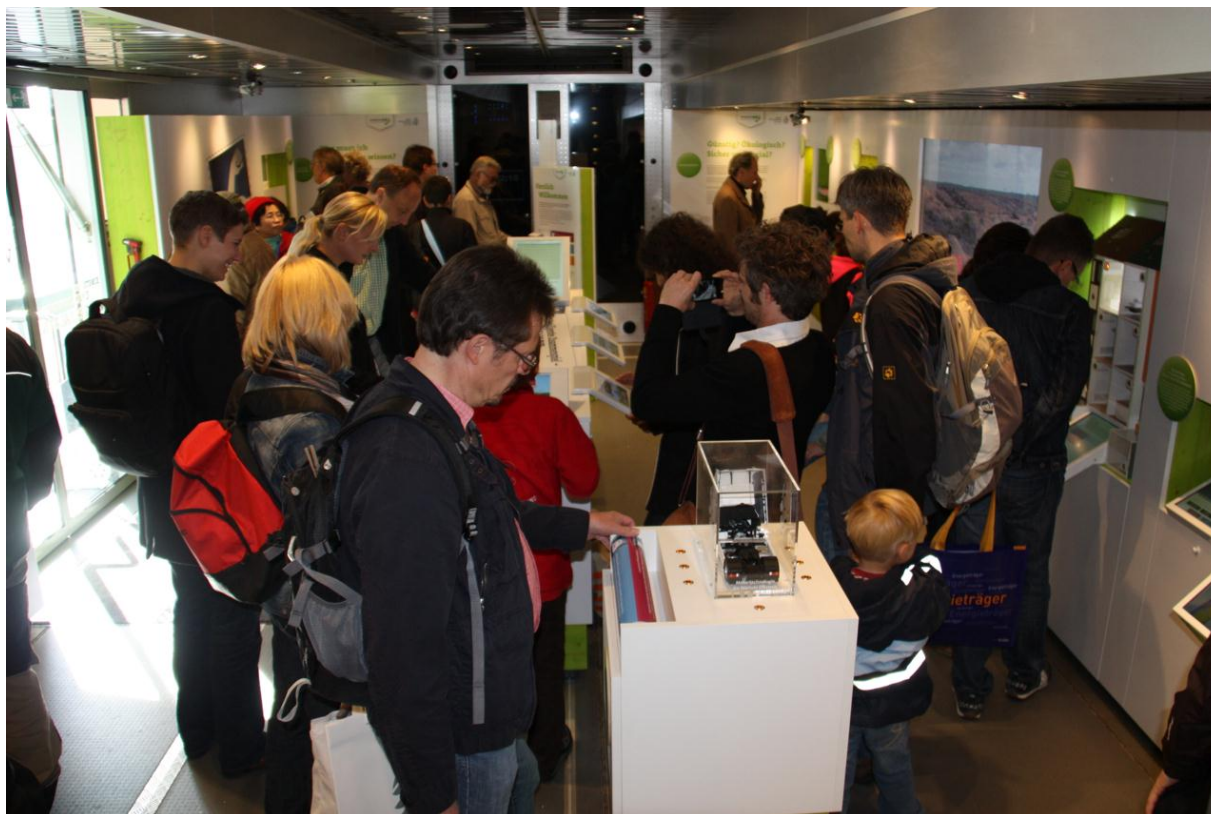
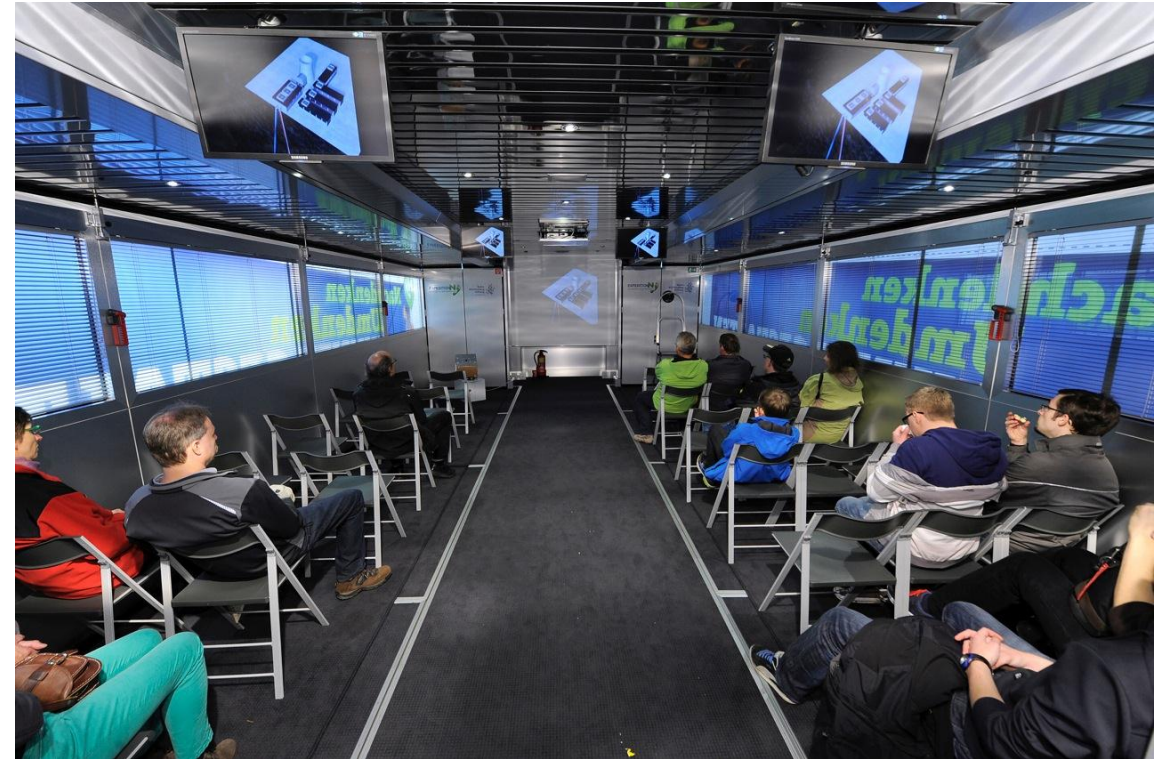
- establish personal connections and relevance
- lead to continuing interest
- increase their feeling of capacity for understanding
- take ownership of ideas

Layout of "Expedition N" Mobile



Expedition N Mobile of the Baden-Württemberg Foundation, operated by Flad & Flad

The New "Expedition N" Mobile



Smart Grid Game Concept

Visual touch display for each player

- act to maintain home environment through energy use
- changing weather, day/night over one virtual week (5 min)

One player supplies energy for other players with hand-cranked generator

Scenario 1: initial, uncoordinated play

- demand can exceed supply, leading to blackouts

Scenario 2: coordinated energy use

- demand is flattened and supply is adequate
- additional effects of improved insulation, efficient appliances

Smart Grid Game



Lessons To Be Learned

Collecting and analyzing visitor responses

- Responses to roles of consumer, supplier, regulator
- Visitor behavior around specific exhibit elements
- Compile and categorize questions of visitors
- Collect anonymous data on visitors' behavior in game
- Develop Agent-Based Model of consumer behaviors
- Relate data to specific socio-economic communities

Improve game structure and play

Replicate game in other venues

Thank you for listening
Questions?