



# A SOCIOTECHNICAL APPROACH AND FUTURE VISION PROPOSAL FOR AWE IN THE U.S.



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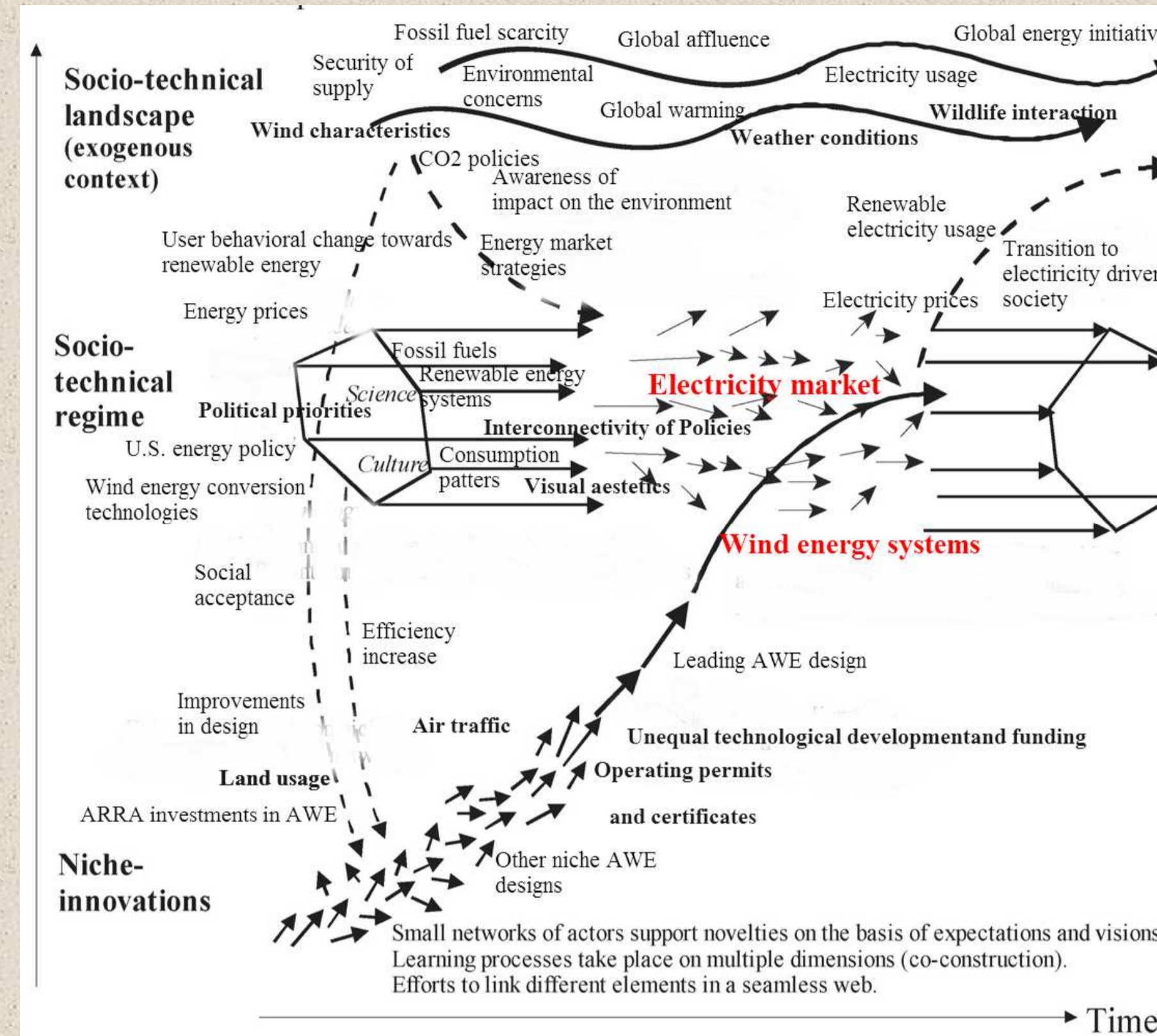
## Research question

- What are the current socio-technological developments of AWEs in USA ?
- What are the main drivers and barriers and how could they be turned in proposals to reach a prosperous commercial development on the U.S. electricity market with building social acceptance?"

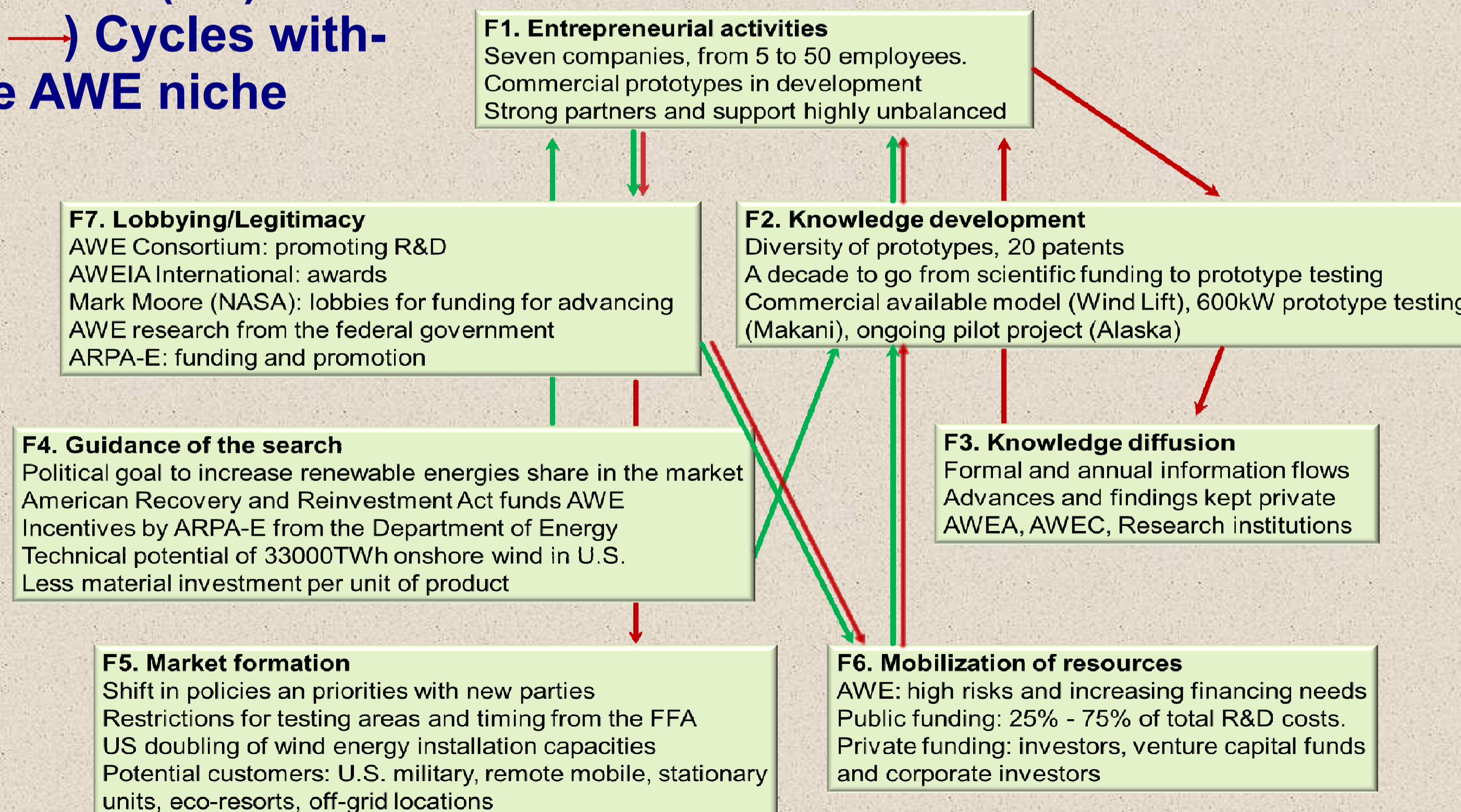
## Methodology

- A **Multilevel Perspective** approach is used where AWE is considered a technological niche, surrounded by the regime and landscape levels.
- The **Functions of Innovation Systems (FIS)** framework is applied to map the relevant activities to reach goals and their creation of vicious and virtuous cycles .
- A non-participatory **Backcasting (BC)** methodology is used to create a desired future vision for AWE in the U.S. and the actions needed

## Multilevel Transition Overview



## FIS - Virtuous (→) and Vicious (←) Cycles within the AWE niche



## BC - AWE Vision for 2050

In 2050, wind energy systems will become **part of the energy market** and AWE systems will be available as a renewable energy source in this regime. A **leading AWE design will dominate** the market while the **rest will be commercialized** as well but not at the same rate, granting this technology a wide diversity of applications and customers. AWE technology will **provide electricity in off-grid areas** and other services such as weather monitoring, communication, and will also act as a backup systems after natural disasters. AWE will coexist with the ground-based wind energy to increase their share in the energy market, reducing the influence of fossil fuels prices on the development of this technology. The different energy demands and environmental conditions will help maintain the diversity of designs

