



The Transaction Costs of Renewable Energy Technologies, Policies, and Projects.

Tyler Burton, Ph.D.



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“We require not so much to be instructed as reminded”

The Main Idea: Transactions Costs

- Transaction costs are a very real and often discounted element of a project's cost structure.
- In the energy business, transaction costs are well-recognized as capable *projects, technologies, and policies* killers.
- Technologies and policies live and die by their practical application to real world economic activity – particularly their application to *projects*.
- From the social perspective, if we value the promise of renewable energy technologies, it is private firms' and public policies' best interest to minimize renewable energy project transaction costs.

Transaction Costs: What are they?

- Transaction costs (TCs) may be broadly-defined as *costs not directly related to the production of goods and services*.
- TCs are essential for affecting the *trading of goods and services*.
- TCs may be viewed as *friction* generated by economic activity, (providing an interesting *2nd Law of Thermodynamics* parallel).
- Such transactional friction can be reduced but never eliminated.
- *TC minimization* becomes the objective.

Transaction Costs: Examples

- Information gathering, assessment, storage, management
- Due diligence
- Risk analysis
- Negotiation
- Contracting
- Information gathering, reporting
- Dispute resolution

Risk, Cost, and Policy

- The perception of current or future risk strongly influences transaction costs.
- The perception of current or future transaction costs strongly influences risk perception.
- **Feedback loop: either negative or positive.**
- Public Institutions and Private Firms policies must remain focused on the minimization and equitable sharing of risk and transaction cost elements.
- To efficiently advance renewable energy technologies, Public and Private policies must continually work together towards synchronization.

Synchronization

- Continually, through harmonization of Public and Private policies, how can we make the renewable energy project process more:
 - Efficient - in the appointment of risks and the management of transaction costs;
 - Transparent – in the sharing of information for the elimination of distrust;
 - Less subject to opportunism or gaming;
 - Protective of property rights.

Finally ...

From the big-picture and social perspective, if we truly value the possibilities of renewable energy technologies, it is in Private and Public policies' best interest to minimize renewable-energy project transaction costs.

...Thank You