Energy Security

Norman Bradburn, Ph.D.
Bernard Dugoni, Ph.D.

NORC AT THE UNIVERSITY OF CHICAGO
A National Organization for Research and Computing

Definition of Energy Security

- “The availability of usable energy supplied, at the point of final consumption, at economic price levels and in sufficient quantities and timeliness so that, given due regard to encouraging energy efficiency, the economic and social development of a country is not materially constrained.”

Four Elements:

- Availability
- Reliability
- Deliverability
- Affordability

Availability

- Resources Availability
- Supply Potential

Reliability

- Political Stability
- Rationale used in developing regulations related to energy
- Predictability of energy supply
- Interdependence

Deliverability

- Infrastructure
- Moving energy to final consumer

Affordability

- Prices
- Disposable Income

Threats to Energy Security

- Physical disruption of supplies
- Long-term physical availability of supplies
- Negative effects on economic activity
- Collateral damage

Part I: Survey

- approximately 500 stakeholders in the energy field
- 100 each drawn from five sectors of the energy community

Five Sectors of the Energy Community

- Governmental agencies in energy vulnerable countries (Western Europe, including Turkey, Central and Eastern Europe, the US and Canada)
- Government Agencies in self-sufficient countries with export potential (Russia and Central Asia)
- Energy Industry (IOCs and NOCs)
- Financial Community
- International Organizations

Part II: Delphi Study

- “elite” experts
- nominated by the UNECE

I. Five separate Delphi exercises

1) governments of energy vulnerable countries;
2) governments of energy self-sufficient countries with export potential;
3) the major energy industries;
4) the financial community;
5) specialized international organizations concerned with energy.

II. Synthesizing Delphi Exercise

- Using a group of experts drawn from all of the sectors
- Assess the probabilities that result from the judgment of experts in each of the sectors independently to provide an overall “synthesized” perspective.
- This will emerge in the Delphi averaging across the sectors in this multi-sector group.

Delphi Group Participants will

- Estimate probabilities they would associate with the events in each of several scenarios.
- Give reasons for their views based on their experience and expertise

Iterations

- results computed from the first iteration will be “fed back” to the experts for a second iteration to be evaluated and revised.
- The results of this second iteration should show more convergent views based on shared information and expertise.
- If this is not substantially the case, a third iteration will be performed.

Reasons for choosing Delphi

- The Delphi Technique allows the exchange of perspectives from a variety of experts similar to that provided by focus groups.
- However, unlike focus groups which can be greatly influenced by irrelevant group dynamics, the Delphi Study allows this interchange to take place without the in-person group interactions.
- As a result, no individual in the group can dominate a discussion, employ rhetorical ploys to exert influence, or exert even inadvertent influence by reacting to opposing viewpoints in a negative way.