

Smart Grid Deployment in BC

Regional Case Study



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Smart Grid in BC

- SG is one initiative BC plans to use to reduce GHG emissions (first step: smart meters)
- SG deployment can take many paths
- SG path is influenced by sociopolitical dynamics including regulations, institutions, economic context, and **societal acceptance**

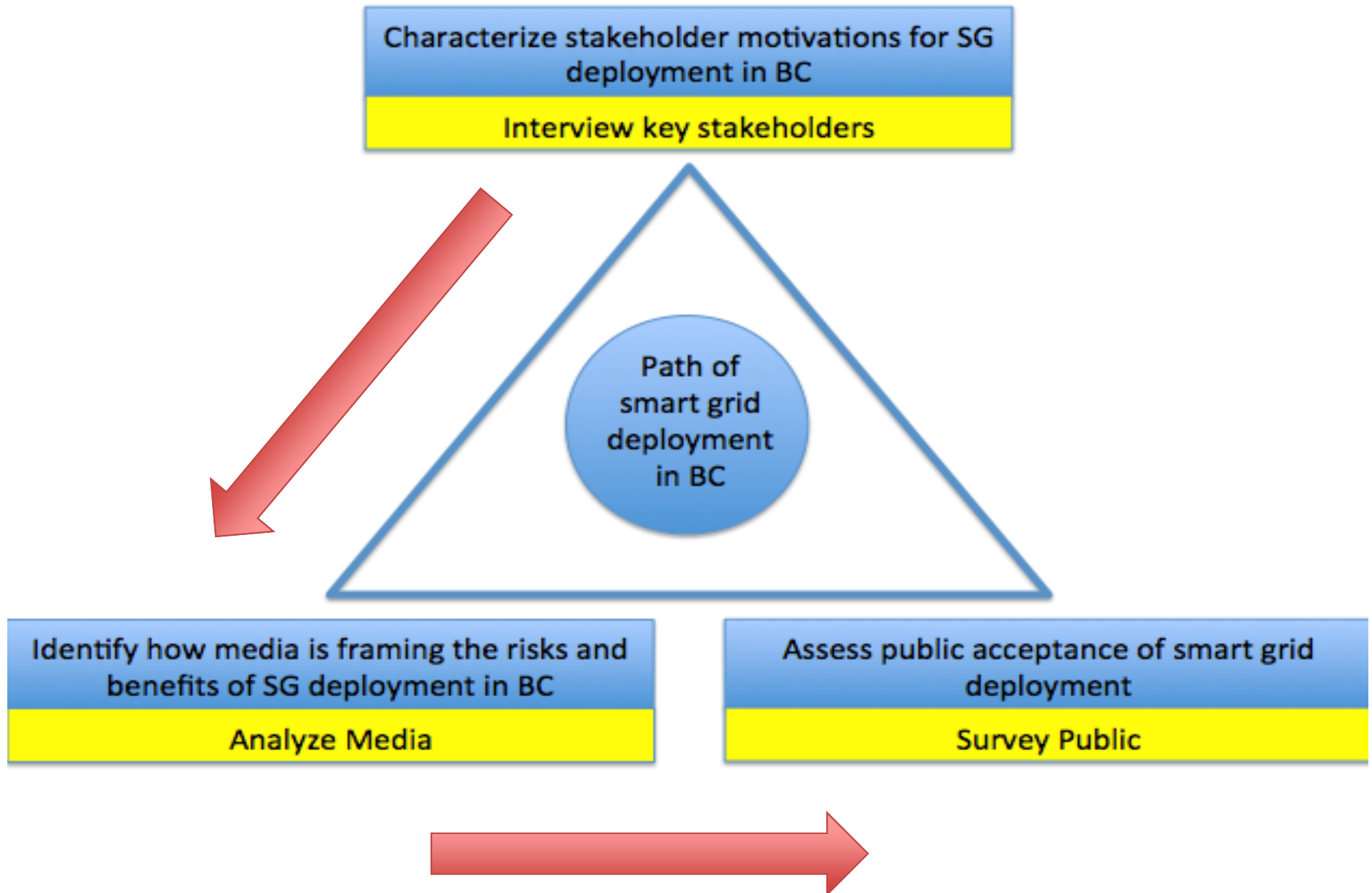


Societal Acceptance

- **Stakeholders** (knowledgeable, established motivations, and highly influential)
- **Lay public** (less knowledgeable, malleable attitudes)
- **News media** (gatekeeper of information between stakeholders and lay public, frame risks and benefits)



Research Objectives and Methods



Interview Results - what is the smart grid?

Renewable Energy

Sensors

Consumer interface

DG

Electric Vehicles

Self-healing



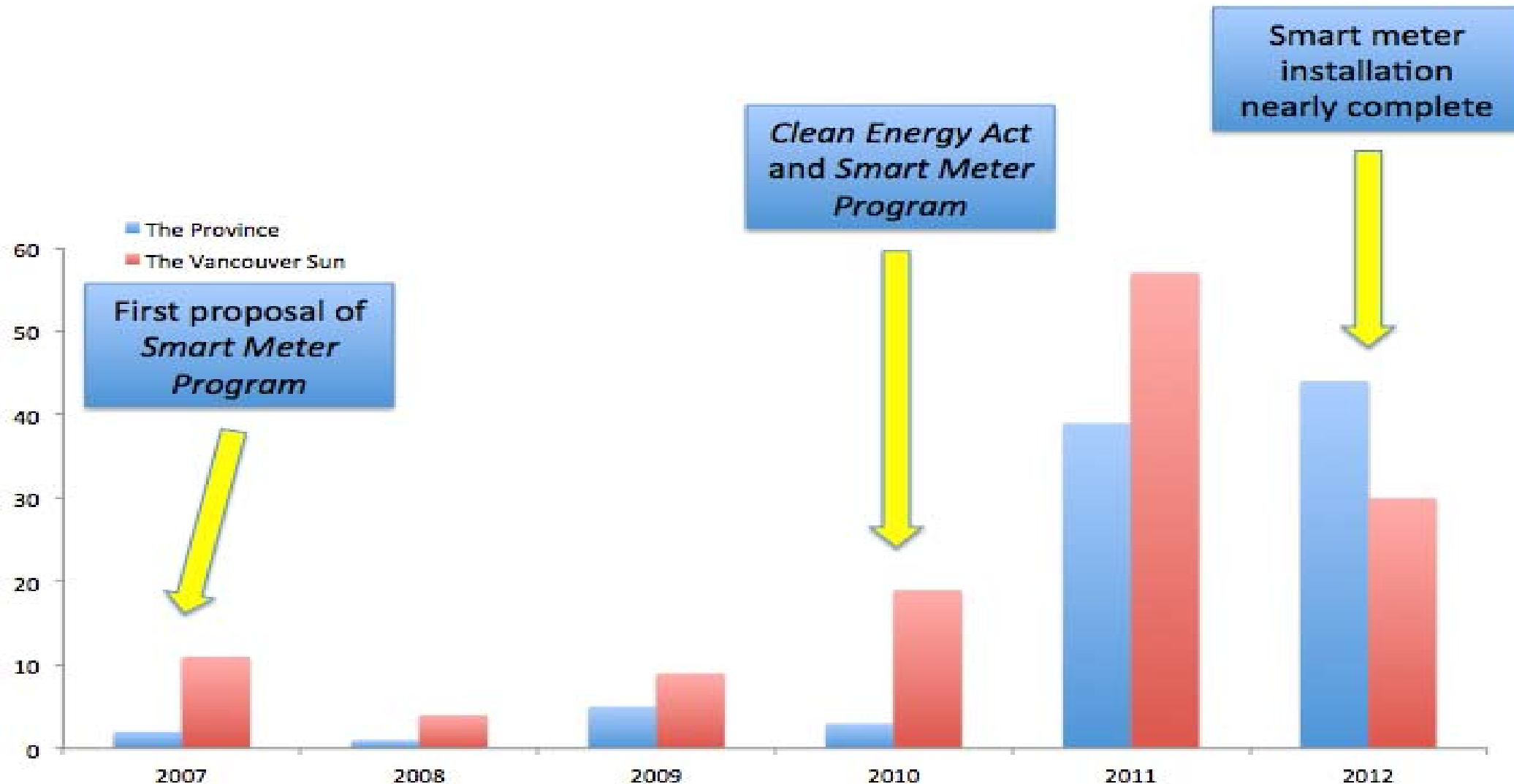
Motivations – many potential paths

Motivation	Example
Economic efficiency	<i>“If we can make the system more efficient, then it holds rates down and makes energy costs cheaper.”Powerex</i>
Strengthening reliability	<i>“[smart grid] allows you to better design your maintenance program to maintain assets, such that you can know before they fail.”Powerex</i>
Energy conservation	<i>“With SG you can look at your past usage and understand your consumption and compare your consumption to those in the neighborhood. These are tools that can provide some incentive to the customer to use less energy.” BCHydro</i>
Facilitating renewable energy technologies and distributed generation	<i>“distribution grids need to be able to respond quickly to integration of solar panels, and other alternative energy sources”.BCHydro</i>
Increasing employee safety	<i>“When you have more visibility in terms of what's going on in your system, then you're able to provide crews with better information as they go out there to do work related to the power grid.” BCHydro</i>

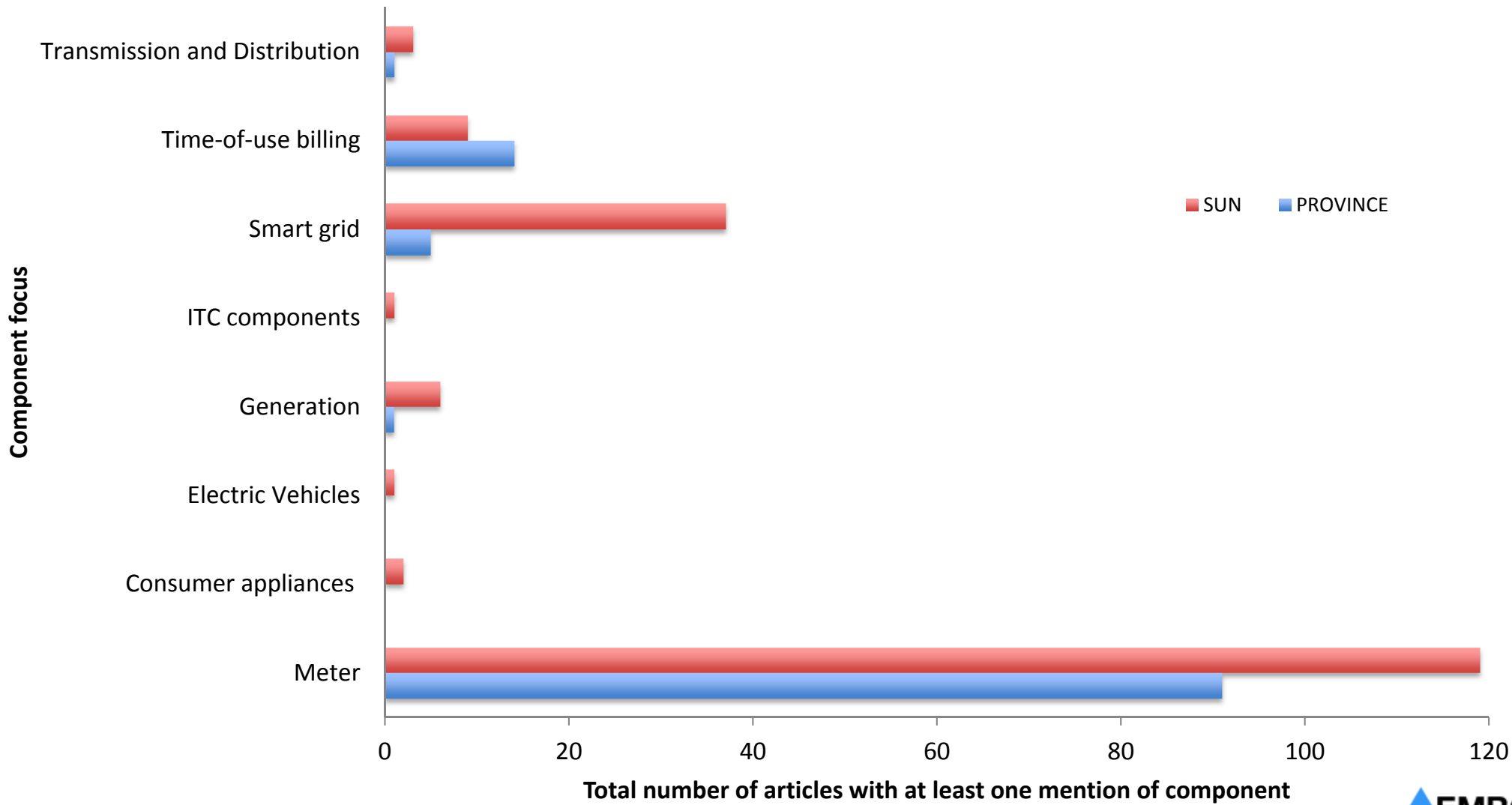
What motivations are being prioritized?

Media Analysis – growth over time

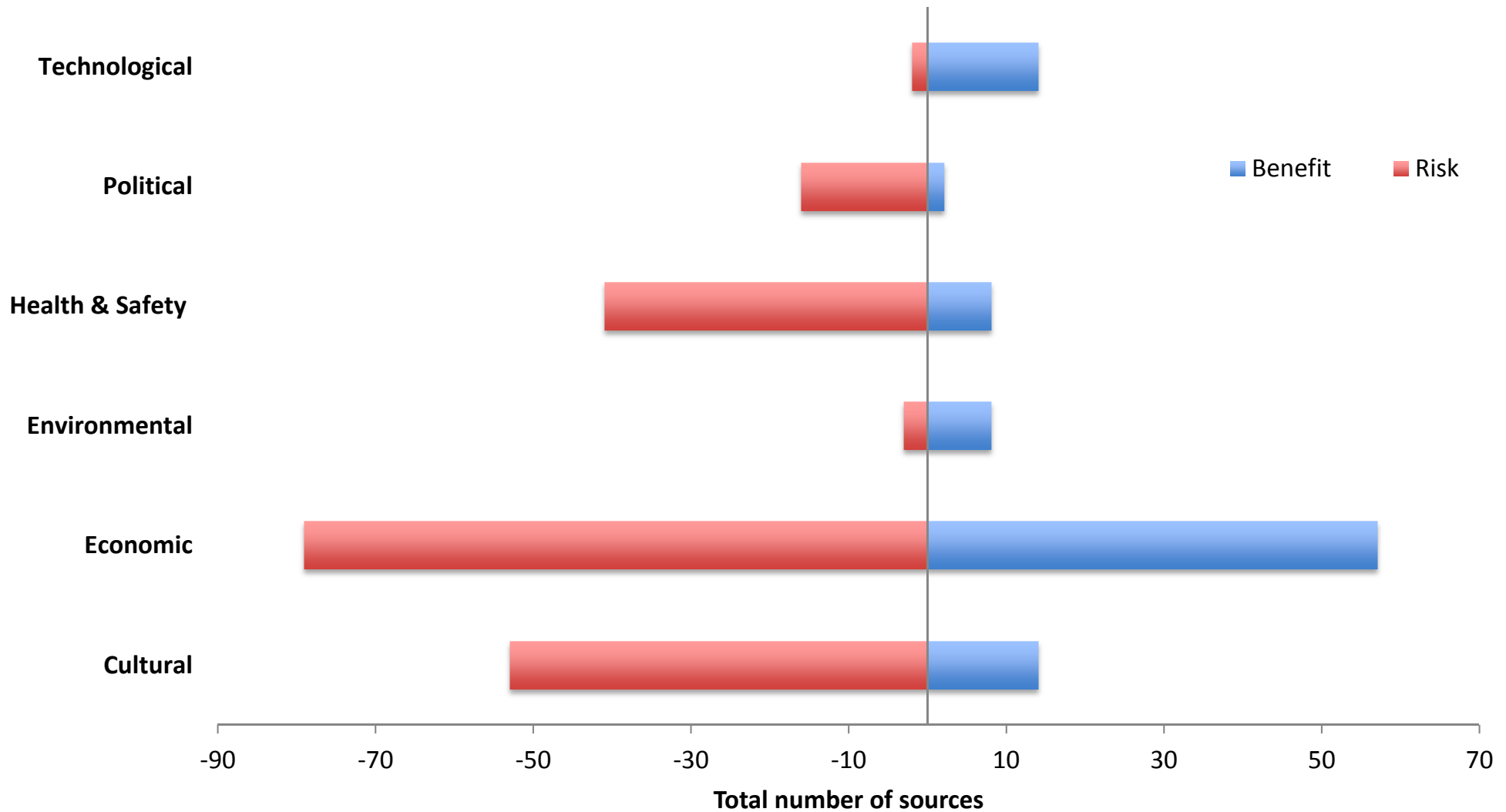
- Highest circulating newspapers in BC: Vancouver Sun and The Province



Media analysis – majority focused on smart meters



Economic **risks** and **benefits** dominate discourse

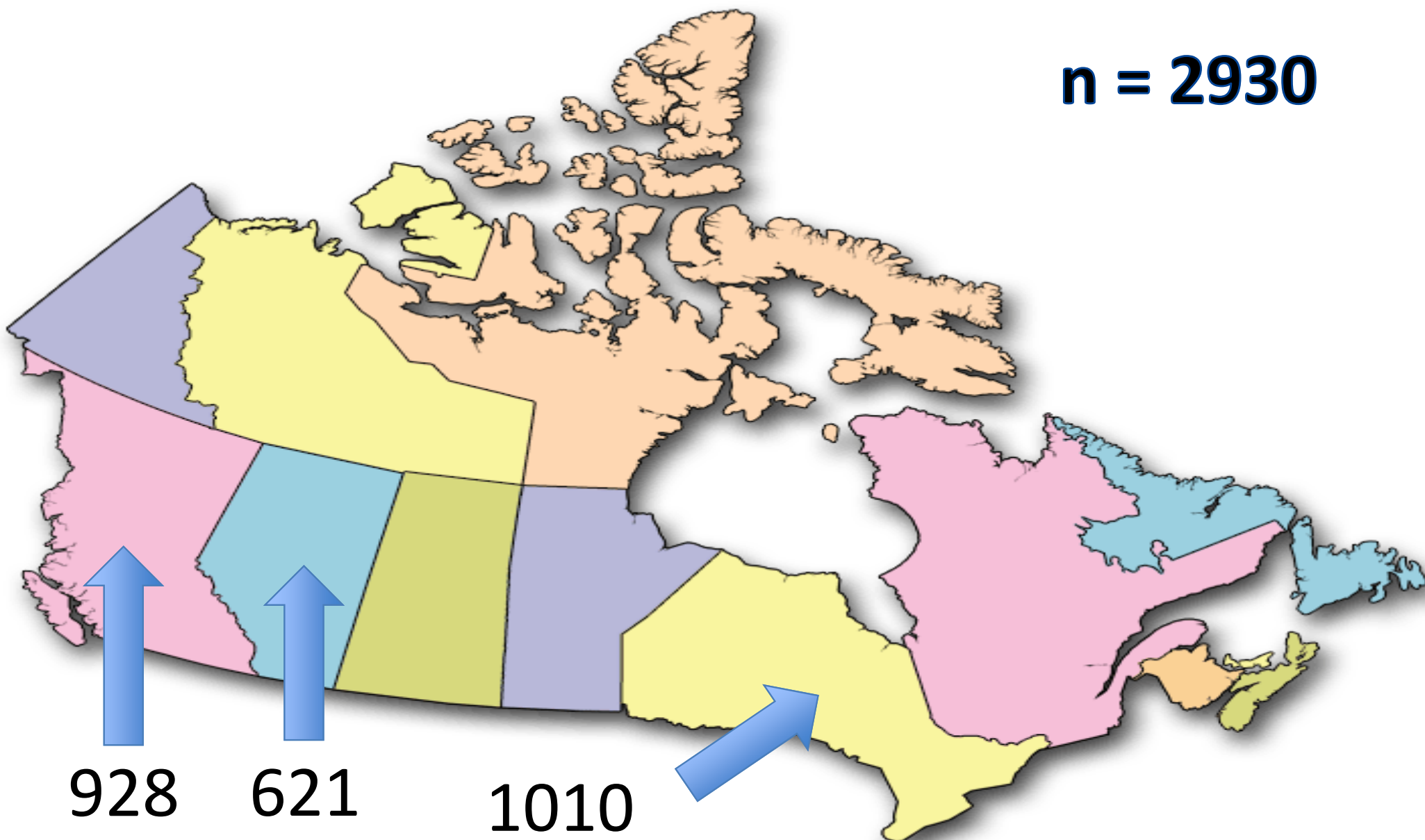


Break down of top frames

Top Categories	Most Prevelent Issues	% of Mentions
Economic Risk	Cost of smart meter program	55%
	Inaccurate billing	27%
	Time-of-use pricing	16%
Economic Benefit	Increasing overall cost effectiveness	30%
	Reduced electricity theft	24%
	Reduce future electricity rates	34%
Cultural Risk	General privacy issues	49%
	Hacking/cyber attacks	10%
	No opt out program	15%
Health and Safety risk	Radio frequency radiation	70%
	Fire hazards	23%

Smart Meter Survey

n = 2930

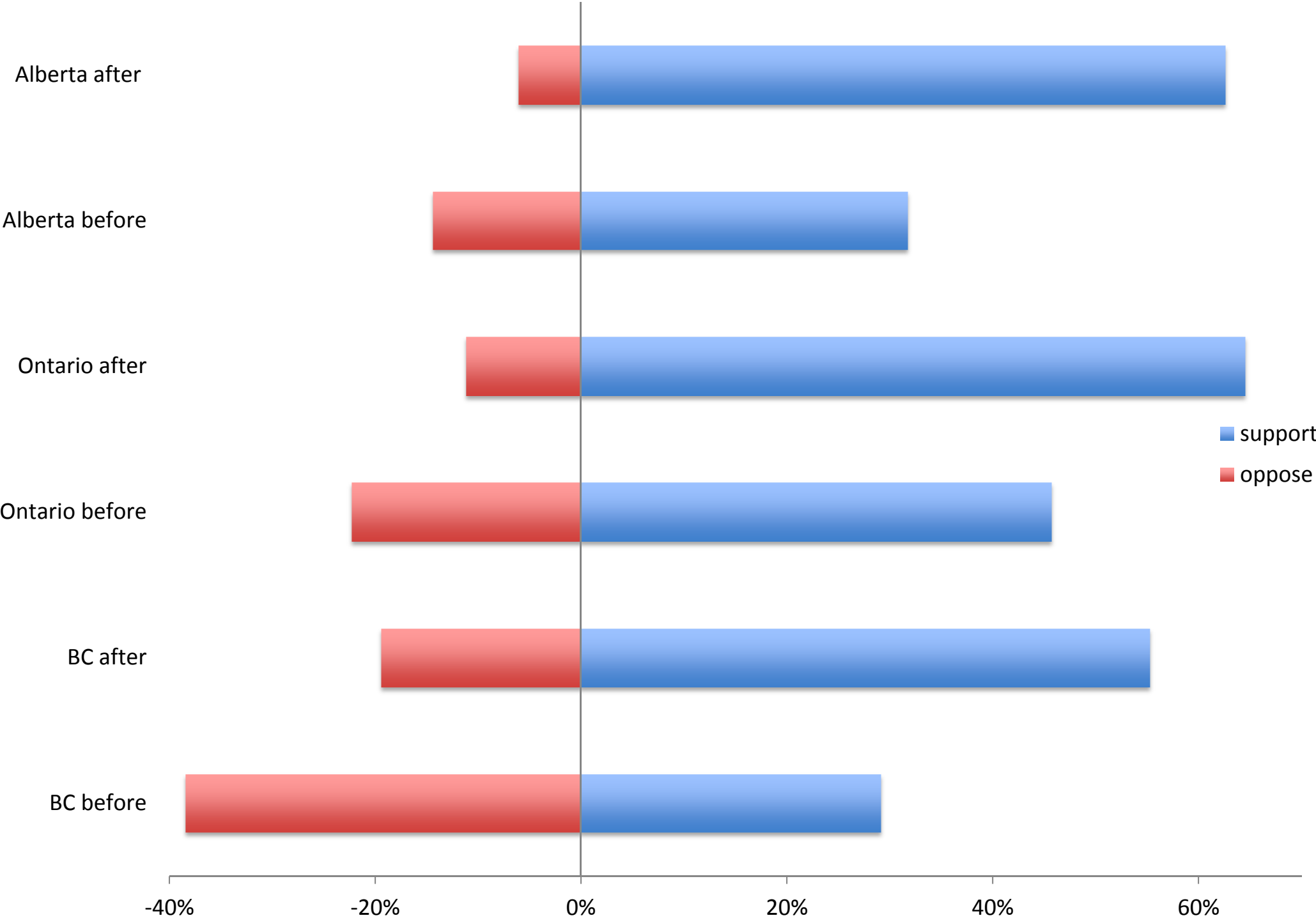


Smart meter support

We reframed the question:

“If smart meters were designed to reduce environmental impact of electricity without increasing the cost of electricity, would you support?”

Smart meter regional support before and after reframing



Conclusions and policy recommendations

1. Create comprehensive smart grid plan with objective to reduce GHG emissions
2. Reinforce this vision to stakeholders and public
3. Possibly learn from Ontario eg, create a smart grid task force to guide the path of smart grid in BC.
4. Link environmental and economic frames (i.e. SG deployment's short-term economic impact will be minimal, but its long-term environmental benefits will reduce future economic risk).



Future Research

1. Study whether or not participatory process would help uptake.



Thank you!

