UQ Energy Perspectives 2014

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Good energy policies and the importance of effective public engagement

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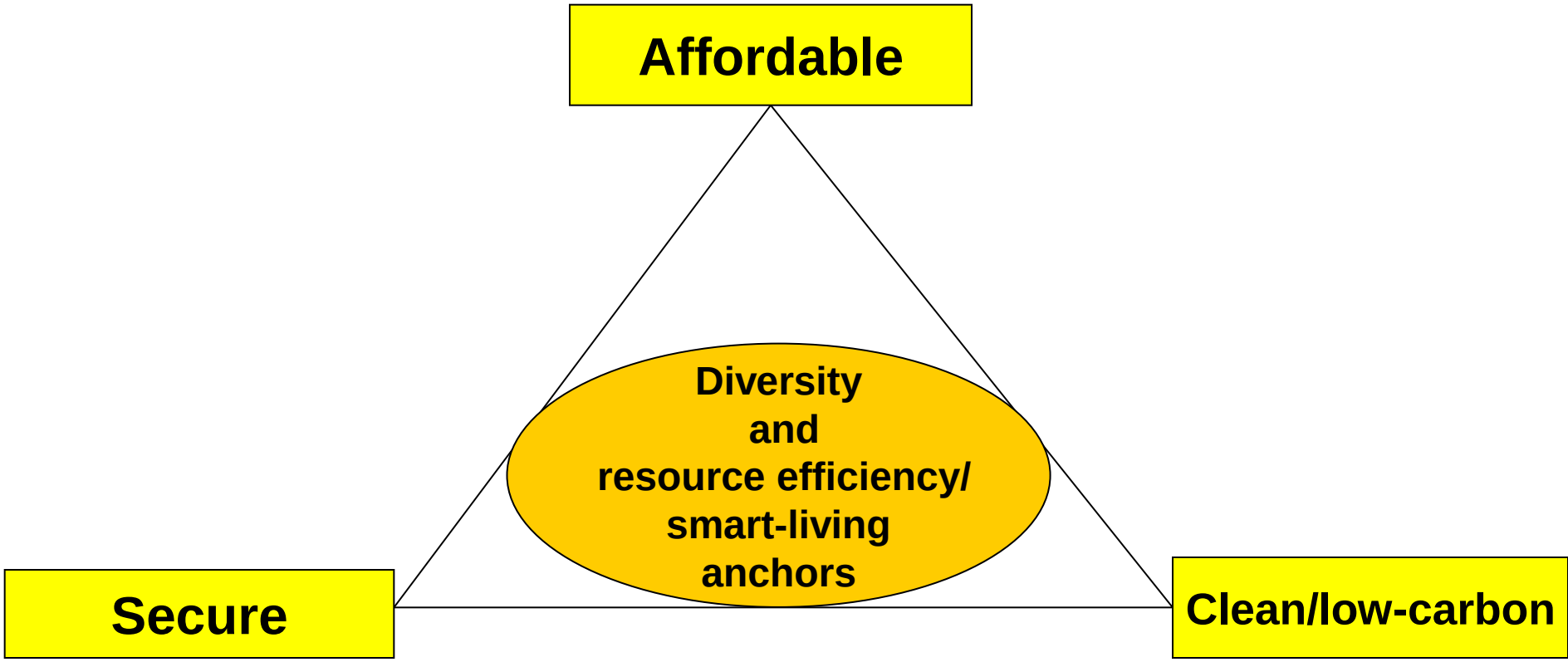
The energy policy & public engagement challenge?

Most people when quizzed carefully agree that:

"***Global civilisation needs access to affordable, reliable and clean/ low-carbon sources of energy and should use that energy, along with other resources, as smartly and efficiently as possible***"

But how is that to be delivered?

Energy policy trilemma: for electricity/heat/transport



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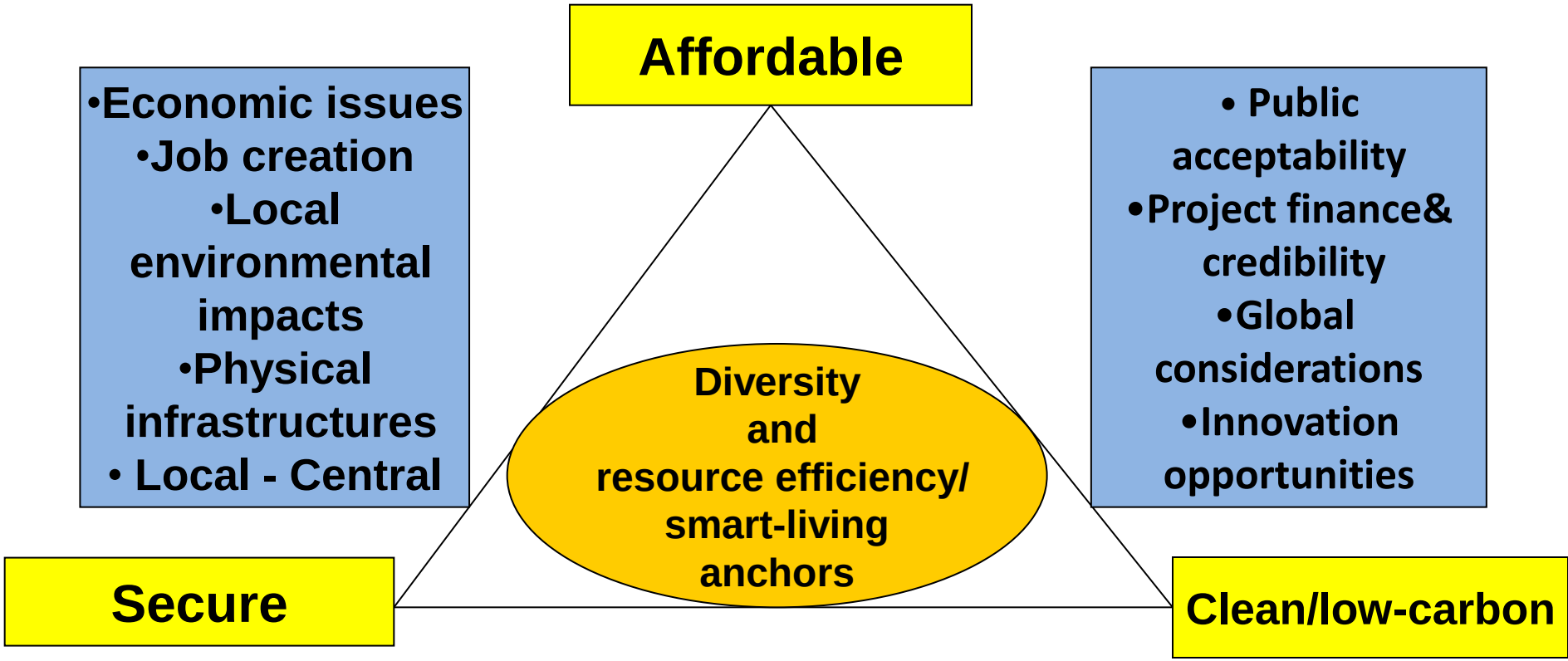
Energy policy trilemma, plus for projects



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‘smarter living’ & ‘central generation’

The future: more focus on consumers and systems ?

Locally driven — Connectable and controllable assets — **State/National facilities**

- Smarter buildings(internet of things/big data/smart appliances/smart meters/);
- demand side management/energy conservation;
- distributed generation with local consumption(’buildings as power stations’- plus micro-grids; district heating; etc);
- smart grids/ local energy storage;
- integrated community /city/region-wide energy systems(including electricity, heat and smarter transport);
- great innovation opportunities;
- strong public support, especially if resiliency & good local benefits;
- how best to marry local and central generation?

open cycle gas/ small modular nuclear/ marine/etc

- Transmission grids(electricity and gas) already fairly smart and efficient but uncertainties around:

- which mix of power stations: nuclear, gas, coal, large-scale renewables, pumped storage?

- how best to maximise their positive economic impacts;

- maintaining security of supply when considerable wind and solar power intermittency?

-how best to ensure well- informed public debate around large-scale energy and climate change mitigation issues?

- how best to marry central and local generation?

City&region system-architects and ESCOs?

National energy system-architect ?

New utilities/regulatory models?

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Systems thinking and integration

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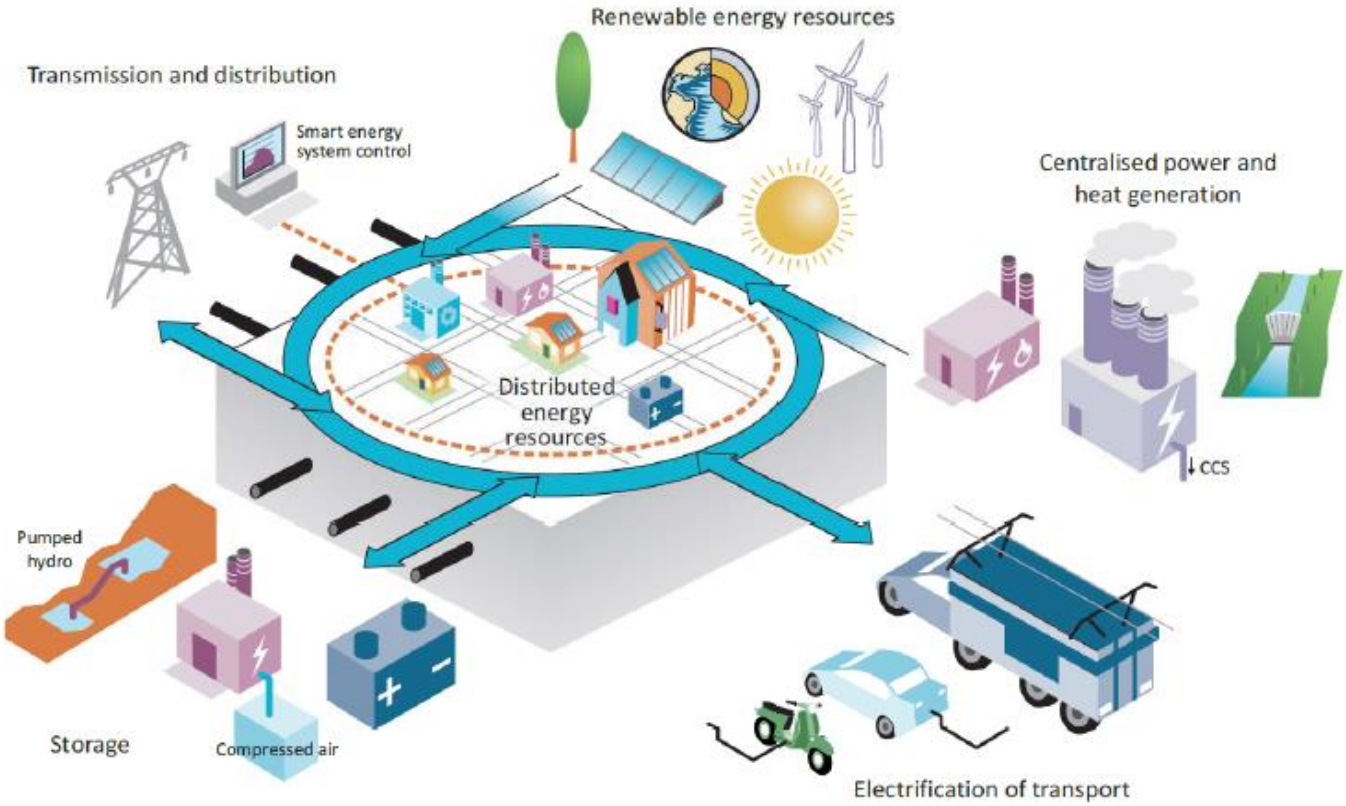
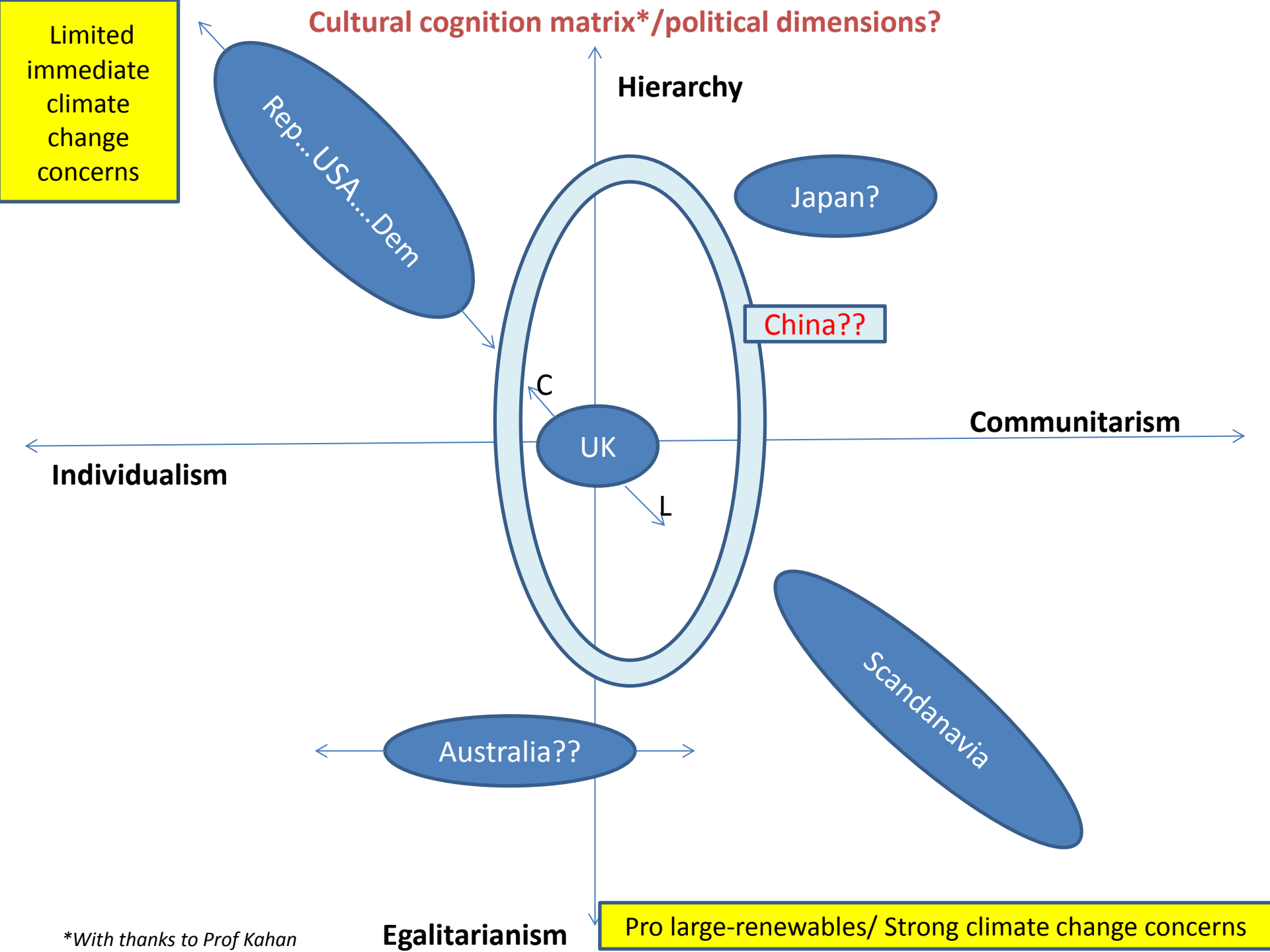


A sustainable electricity system is a smarter, multidirectional and integrated energy system that requires long-term planning for services delivery

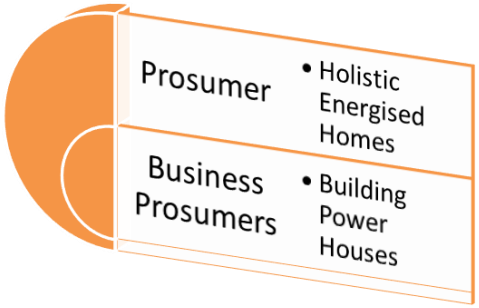
International Energy Agency

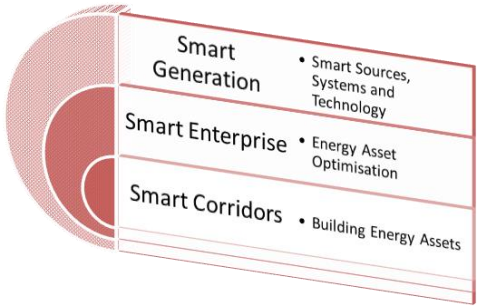

Limited immediate climate change concerns
Cultural cognition matrix*/political dimensions?
Hierarchy
Rep…USA…Dem
Japan?
China??
C
UK
L
Communitarism
Individualism
Scandanavia
Australia??
Egalitarianism
Pro large-renewables/ Strong climate change concerns
*With thanks to Prof Kahan

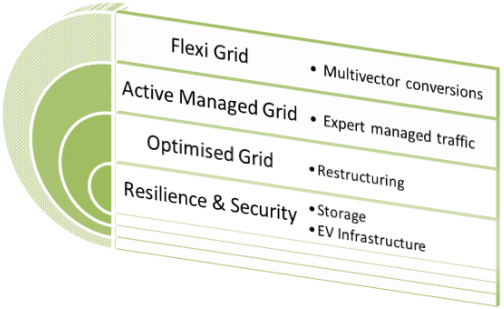
Smart Living Framework

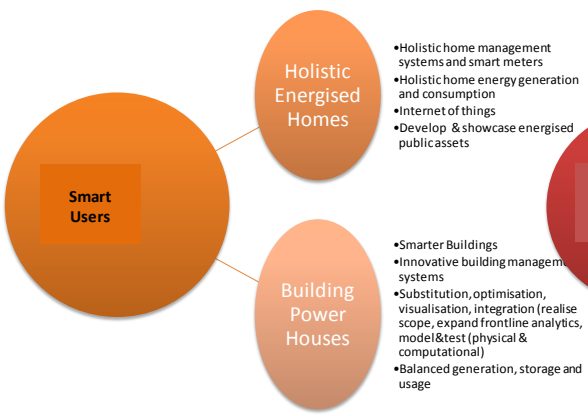
Smart Living Wales facilitates improved and innovative energy systems and infrastructure to mobilise smart users, develop connected assets and deliver a smarter balanced grid.

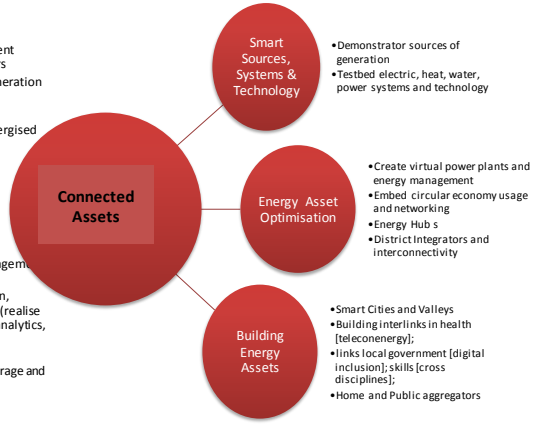
SMART USERS	CONNECTED ASSETS	SMARTER GRID
energised smart building systems taking account of social behaviour	*connecting innovative and localised energy assets more intelligently*	*smart infrastructure options that transform way society produces, delivers and consumes energy*

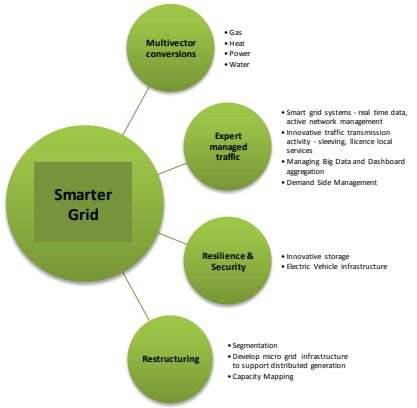












Secure Communication and Computational Platform

Physical Energy Devices	Local Controls	System Controls
- Produce	- electromechnical	- Reliability of physical devices
- Consume	- Electronic	- Interconnected to hostring infrastructure
- Store	- Software	- Monitoring
- Transport		- Energy Network Security assessment

Publics engagement comes in different forms

Stage of development ← downstream upstream →

Strategic Narrative	Strategic / National	Local / Regional	Individual / Household
Narrative formulation • Identify priorities & values important to public & stakeholders • Recognise constraints: technical, economic, scientific & historical	**Policy formulation**[24] • Understanding the public need • Political motives • Technical needs	**Project development** Technical assessment • Options, constraints & social assessment • Identify stakeholders & issues	**Market analysis** Technical need • Understand need & social requirements • Identify market
Narrative development • Participation to develop & agree content & text	**Policy development** • Discuss options • Understand impacts & trade-offs	**Option assessment / selection** • Public participation • Understand trade-offs • Agree preferred option	**Technology development** Market / product testing • Understand interaction with technologies
Narrative implementation • Communication of the Strategic Narrative • Maintenance of the Narrative	**Policy Deployment** • Awareness raising • Increase uptake • Evaluation of the policy	**Project implementation** • Project updates • Evaluation of the project & the process	**Technology deployment** • Promotion / advertising • Installation • Evaluation of the outcomes & process

From UK energy research partnership report on public engagement

Conclusions

- We must all think holistically within an energy systems context –including about how energy is used in practice.
- No magic technology-bullets but some solutions more acceptable than others.
- Low-cost, low- carbon energy is an attractive goal, locally and centrally.
- Public will play an increasing role-enabled by democracy and social media. Recognised in the Australian Energy Green Paper.
- Effective public engagement is not easy or cheap-needs to be facilitated by trusted agents and done as early as possible.
- If it can be created in a way which gives it credibility, a strategic narrative(descriptive, not prescriptive) should enable rationale debate with all stakeholders, including the publics.