



The Role of Utilities in the New Paradigm

A Path To The Future

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Q1 - The role/policy of utilities in regards to maintaining/improving infrastructure

- Maintain grid and system reliability in the delivery of utility services
- The infrastructure system must operate optimally at all times consistent with industry regulatory and best management practices
 - especially during challenging times like natural disasters (e.g., seismic events, fires, weather) and yes during pandemics as well
 - e.g., readiness, capacity and upgrades of centralized load generation, transmission, distribution, transformers, electrical panel boxes & DER customer or utility assets
- Utility assets must be resilient when they may be needed the most to avoid compromising life sustaining services that go beyond quality of life or a temporary inconvenience.

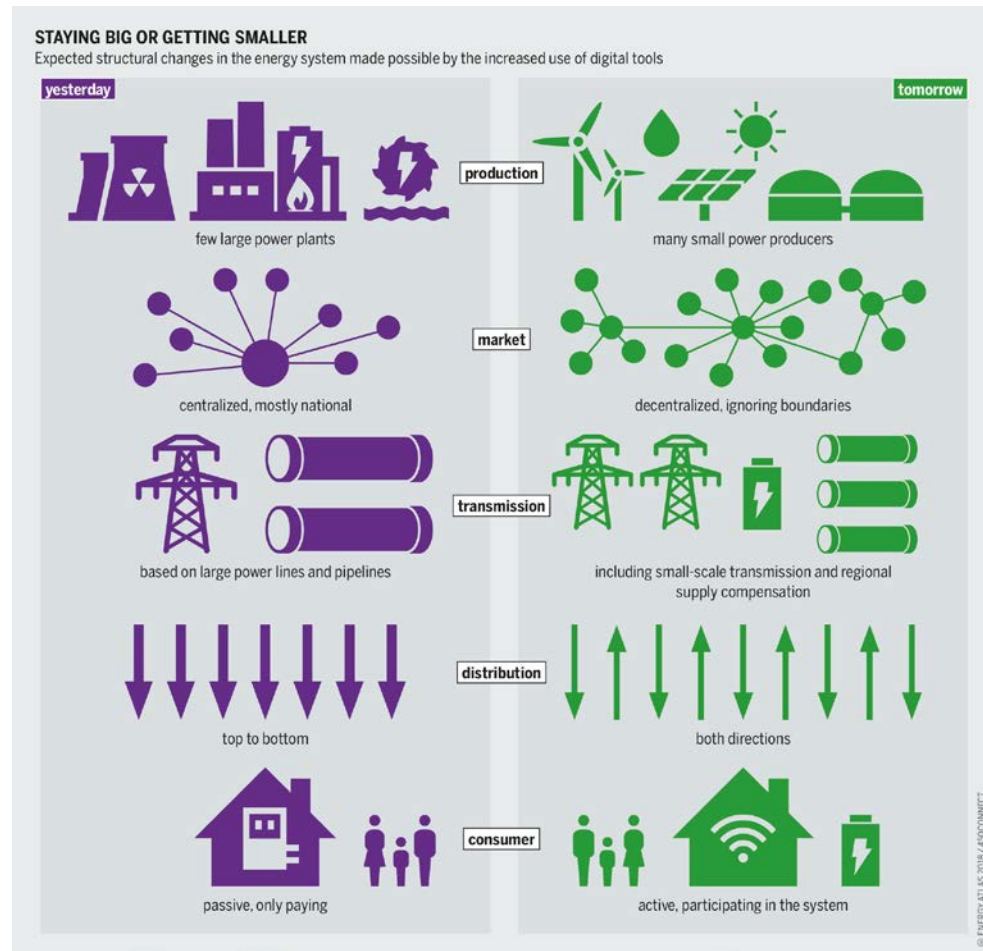


Q1 - The role/policy of utilities in regards to maintaining/improving infrastructure

- Utility assets must be resilient when they may be needed the most to avoid compromising life sustaining services that go beyond quality of life or a temporary inconvenience.
- Service interruptions that could result in deaths are not acceptable due to deferred maintenance; such apparent negligence could result in significant legal exposure and cost to utilities.
- This would exacerbate the financial standing of any given utility in addition to the maintenance that needs to be done anyway, hopefully sooner rather than later.



Q1 - The role/policy of utilities in regards to maintaining/improving infrastructure



Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

- Leverage their expansive customer base to inform customers of opportunities, technology and strategies that address impacts of the pandemic, specific to the water and electrical energy use across all market segments (Res, CII).



Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

- Encourage the dissemination of energy management strategies for HVAC, Indoor Air Quality, Outside Air, etc. ... through studies championed by them.



Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

- Help manage the energy impact of a class of plug loads that are in far greater use as a result of the pandemic: examples include air purifiers, filters, and similar portable devices.



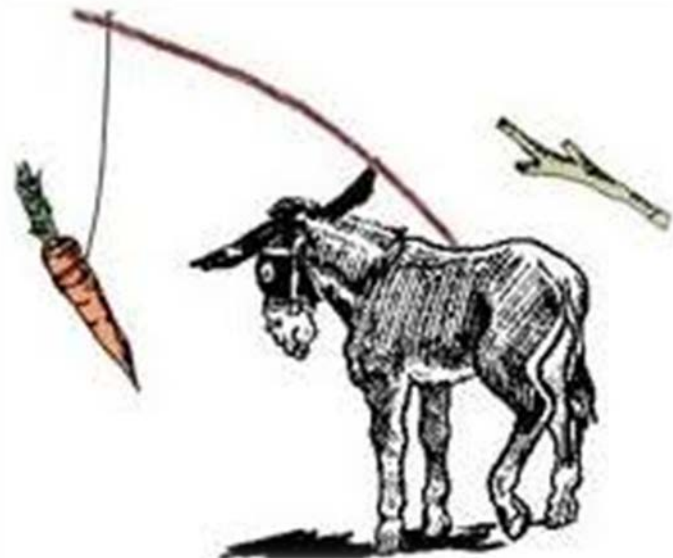
Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

- Help determine the energy impact of disinfection systems such as UV lighting.



Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

- Provide incentives for fully established and proven Emerging Technologies that save energy, water or reduce greenhouse gases.



Q2 - The role/policy of utilities in regards to implementing/enforcing emerging technologies

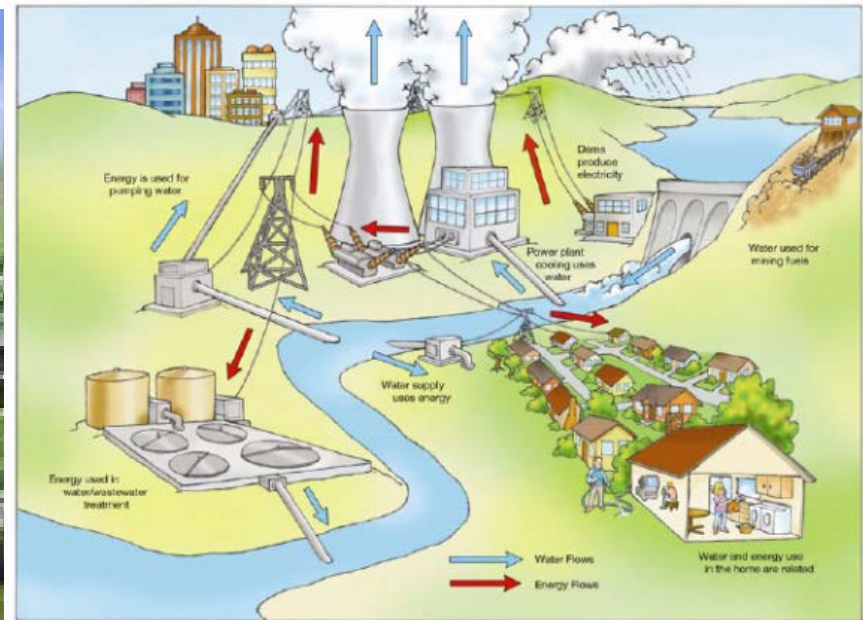
Plan for Local Power Grid – Guiding Principles

- Ensure Reliability
- Environmentally Beneficial
- Allow Flexibility
- Sensitive to Rate Impacts

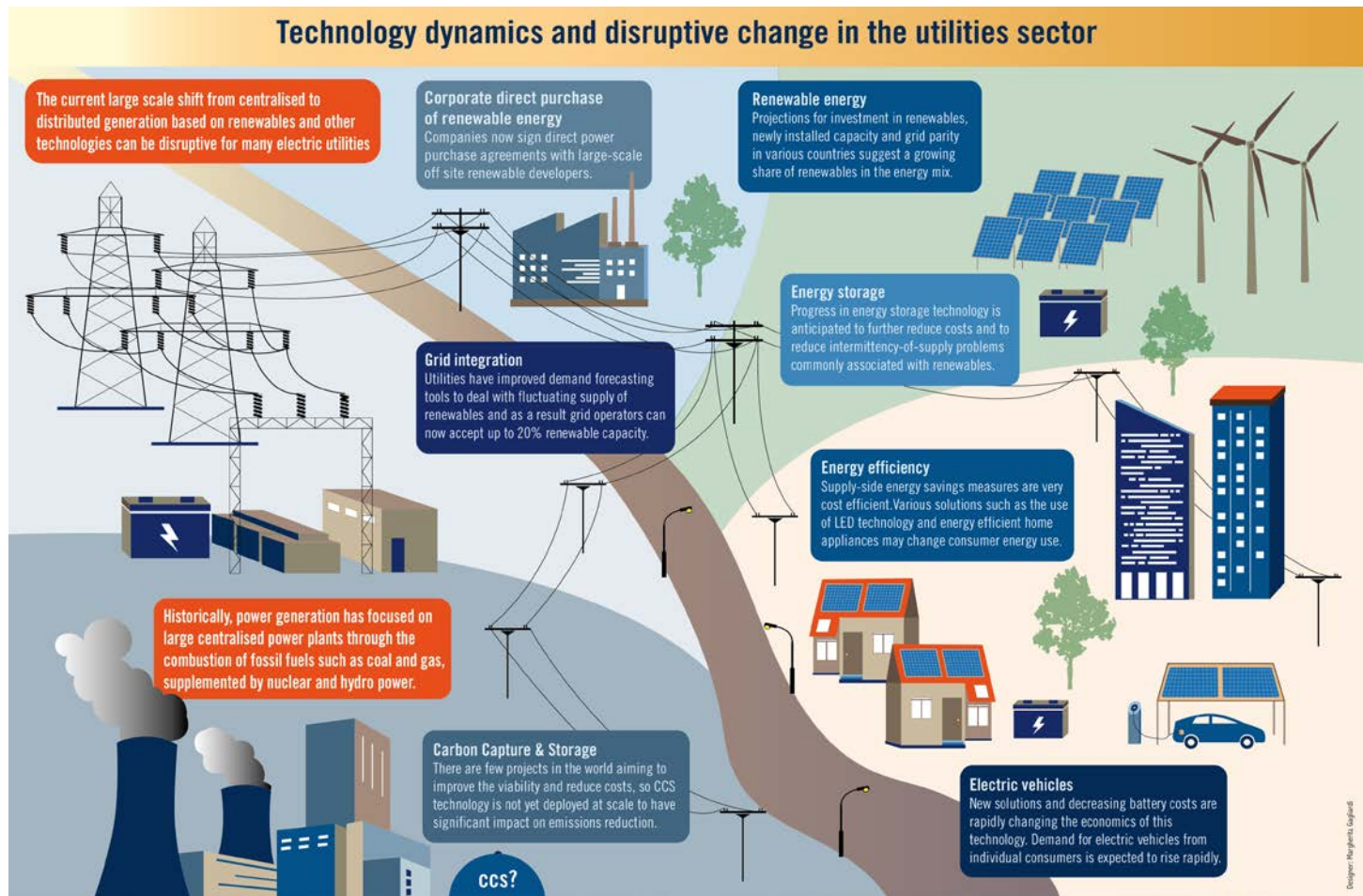


Reimagining LA's Power Grid

Q2 - The role/policy of utilities in regards to implementing/enforcing emerging tech (Cont'd)



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Q2 - The role/policy of utilities in regards to implementing/enforcing emerging tech (Cont'd)

- Utilities are using drone technology not only in basic operation and maintenance but also to detect and assist in fire protection related to transmission line fire risk.



Q3 - Emerging technologies and disadvantaged communities during this Pandemic

- Disadvantaged communities could be assisted through more aggressive incentive and rebate programs across a wide range of opportunities as follows:
 - Retro-Commissioning opportunities for HVAC and space conditioning to improve energy benefits and indoor air quality in residential, multifamily and community center settings.
 - For small individual devices such as air filters and purifiers for those most affected or in need without HVAC in home or building

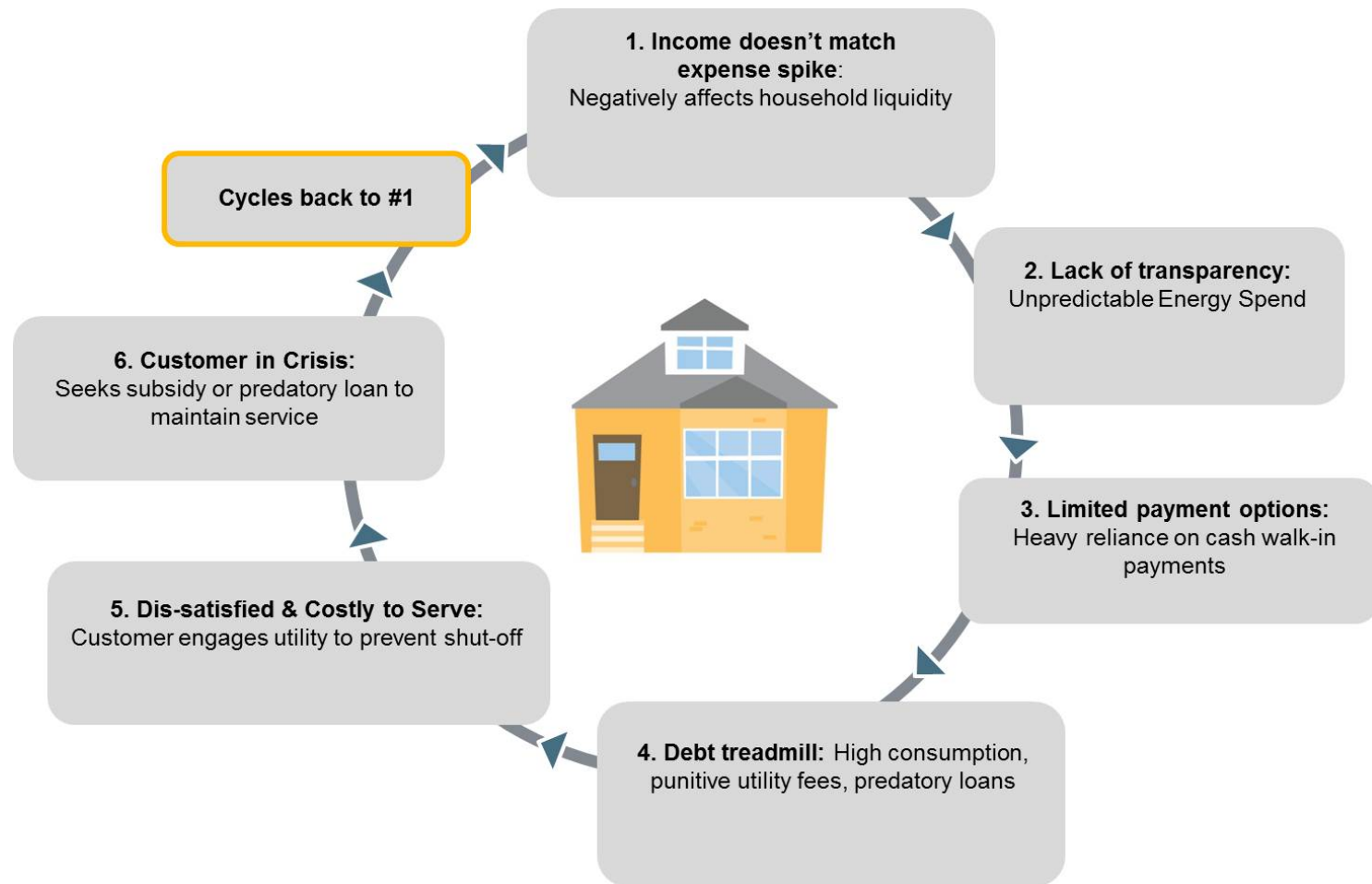


Q3 - Emerging technologies and disadvantaged communities during this Pandemic

- Direct Install Programs as well as giveaway programs for products such as LED light bulbs, shower heads and faucet aerators save energy and water assist all communities and in saving energy and water and help reduce utility bills.
 - All of these products were once Emerging Technologies.



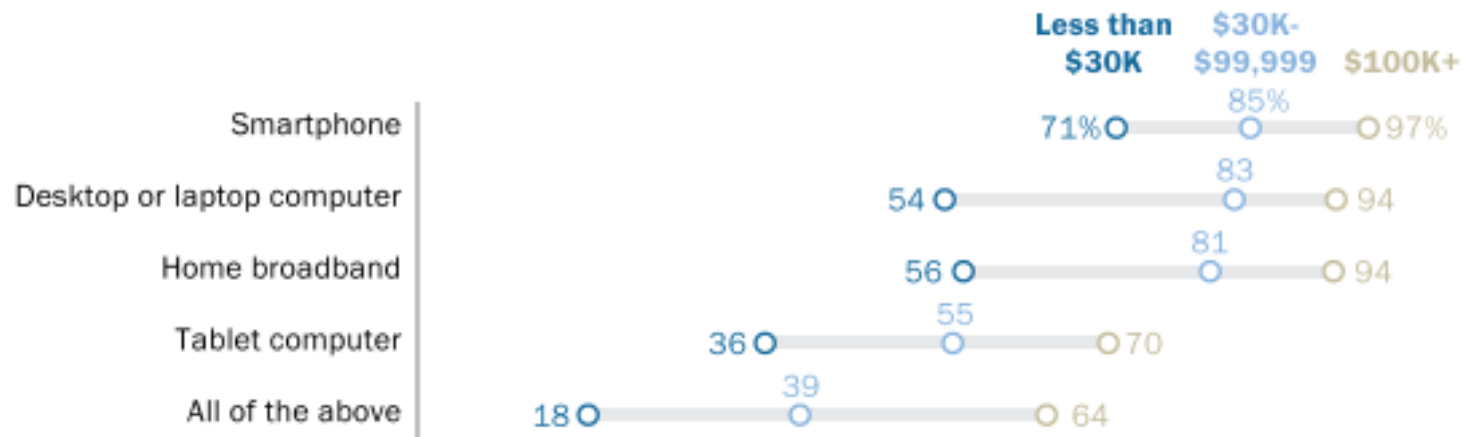
Q3 - Emerging technologies and disadvantaged communities during this Pandemic (Cont'd)




Q3 - Emerging technologies and disadvantaged communities during this Pandemic (Cont'd)

Lower-income Americans have lower levels of technology adoption

% of U.S. adults who say they have the following ...



Source: Survey conducted Jan. 8-Feb. 7, 2019.

Pew Research Center 

Q3 - Emerging technologies and disadvantaged communities during this Pandemic (Cont'd)

Utilities have a direct role in supporting not only electrification of transit but also greater intermobility alternatives



Q4 - What is the difference between sustainable and clean energy?



WIKIPEDIA
The Free Encyclopedia

Sustainable energy is [energy](#) produced and used in such a way that it "meets the needs of the present without compromising the ability of future generations to meet their own needs."

Q4 - What is the difference between sustainable and clean energy?



Clean energy is energy that is produced through means that do not pollute the atmosphere.... Currently, most (all?) known energy production methods have some type of environmental impact, so clean energy describes the energy production methods with the least amount of impact on the environment.

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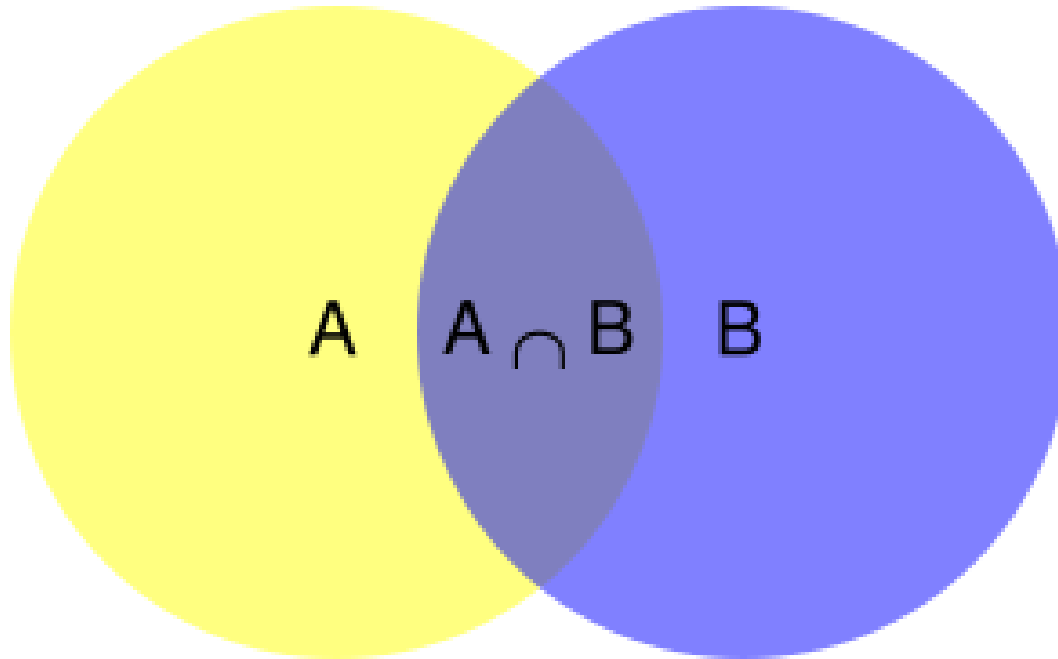


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Not all Sustainable Energy is Clean and not all Clean Energy is Sustainable



Q4 - What is the difference between sustainable and clean energy?

	FOSSIL-FIRED / NUCLEAR POWER	RENEWABLE ENERGY	DISTRIBUTED POWER, STORAGE, EFFICIENCY	TRANSPORT
SUSTAINABLE ENERGY (as defined in this report)	<ul style="list-style-type: none">• Natural gas• CCS	<ul style="list-style-type: none">• Solar• Wind• Geothermal• Hydro• Biomass• Biogas• Waste-to-energy	<ul style="list-style-type: none">• Small-scale renewables• CHP and WHP• Fuel cells• Storage• Demand response / digital energy• Building efficiency• Industrial efficiency• Direct use applications for natural gas	<ul style="list-style-type: none">• Electric vehicles (including hybrids)• Natural gas vehicles• Biofuels• Fuel cell vehicles
OTHER CLEAN ENERGY (not covered in this report)	<ul style="list-style-type: none">• Nuclear	<ul style="list-style-type: none">• Wave / tidal		