

Sustainability *Issues and Opportunities*

A Utility Industry Point of View

Presented by:



Energy. Knowledge. Results.

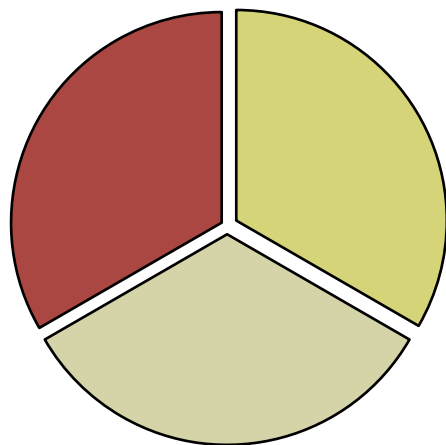
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- Introduction
- The Current Landscape
- A Framework for Addressing Sustainability
- Suggested Next Steps
- Planning for Success

Economic + Environmental + Social Value

Definition of Sustainability

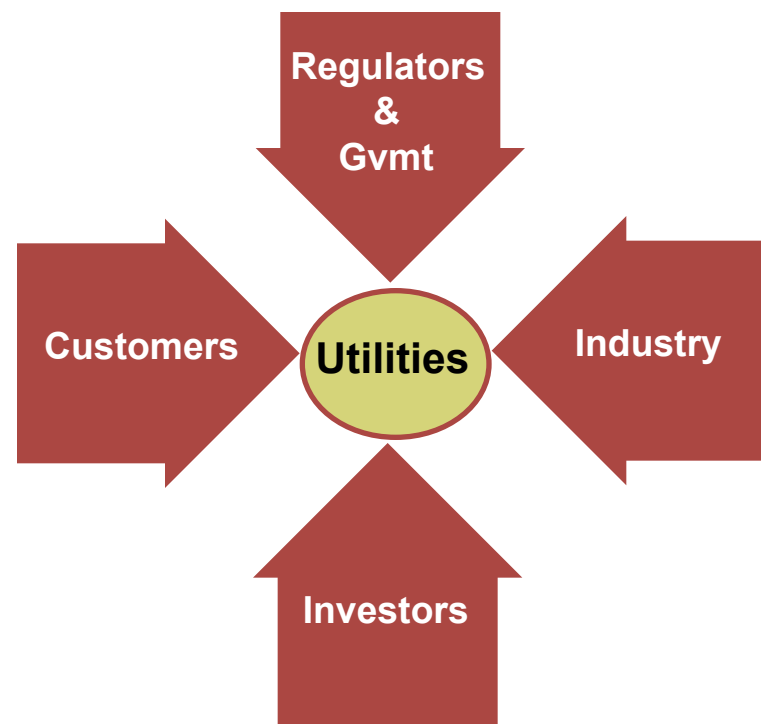
- “A business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments.”



■ Economic ■ Environmental ■ Social

Stakeholder Pressures are Squeezing Utilities & Will Only Increase with Time

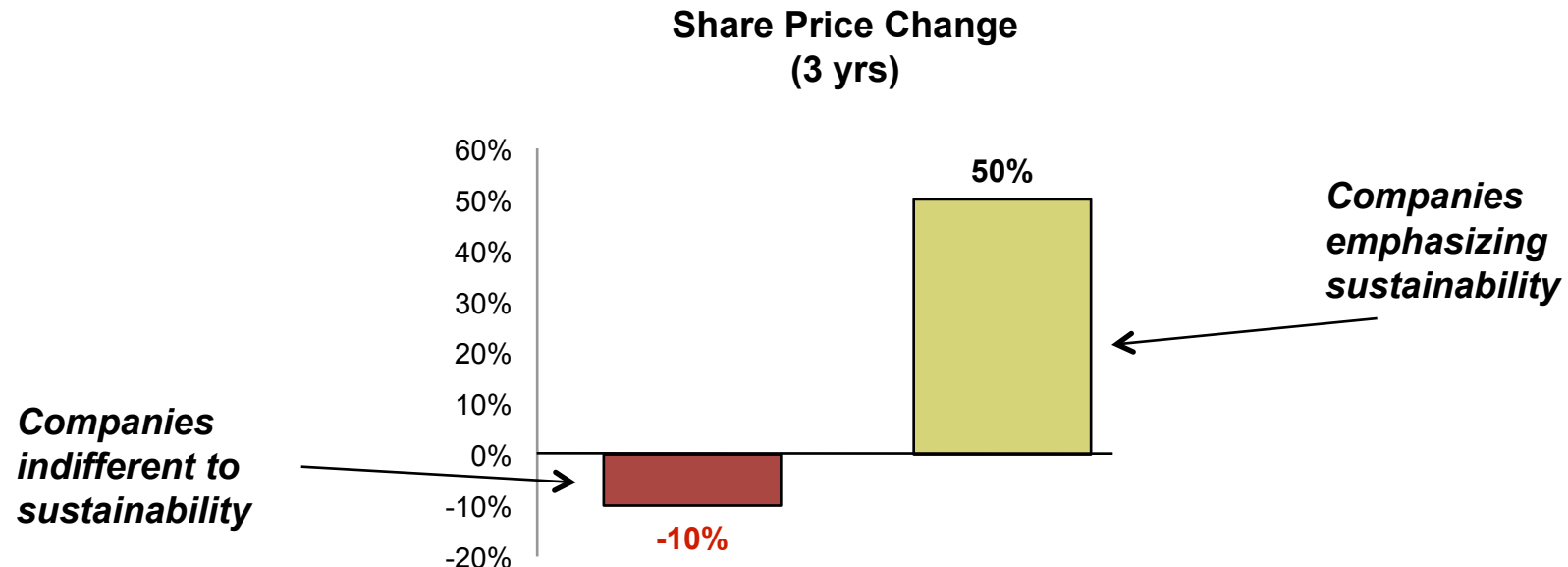
- A comprehensive set of initiatives will be required to enable utility companies to meet these expectations and requirements in a timely and cost-effective manner.



Sustainability Leadership Drives Shareholder Value

Proactive Implementation of Sustainability Initiatives Has Led to Higher Share Prices

- Of 1,200 companies surveyed, executives said benefits included cutting costs (particularly energy expenditures) opening up new markets, and improving brand reputation.
- 57% of the respondents said that the benefits of pursuing sustainable practices outweighed the costs and indicated the growing shift away from a defensive stance toward more active exploration of sustainable business opportunities.



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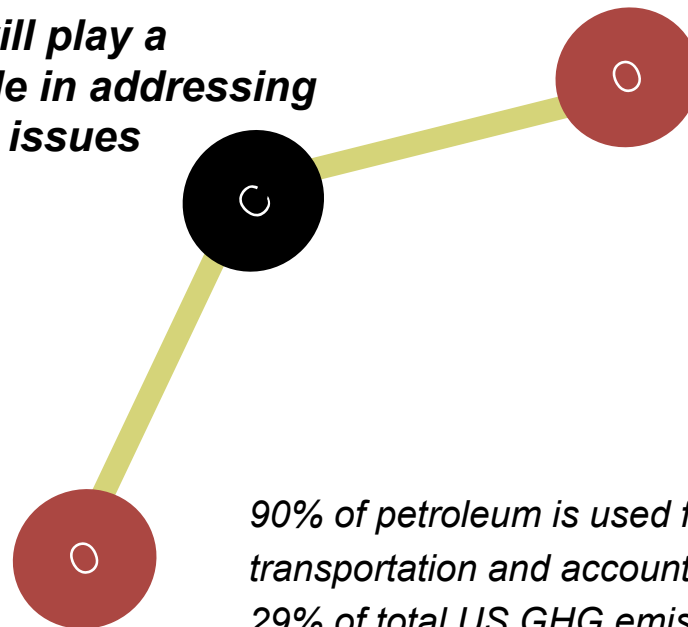
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Carbon Production is Driving Environmental Factor

Carbon has Become Synonymous in Popular Culture with ‘Global Warming’

- Greenhouse gas (GHG) emissions are generally characterized as Carbon Dioxide, Sulfur Dioxide, Nitrous Oxide, Methane, Fluorinated gases, etc. Each gas is the result of burning fossil fuels, with the majority of emissions coming from energy-related sources.

Utilities will play a pivotal role in addressing these two issues



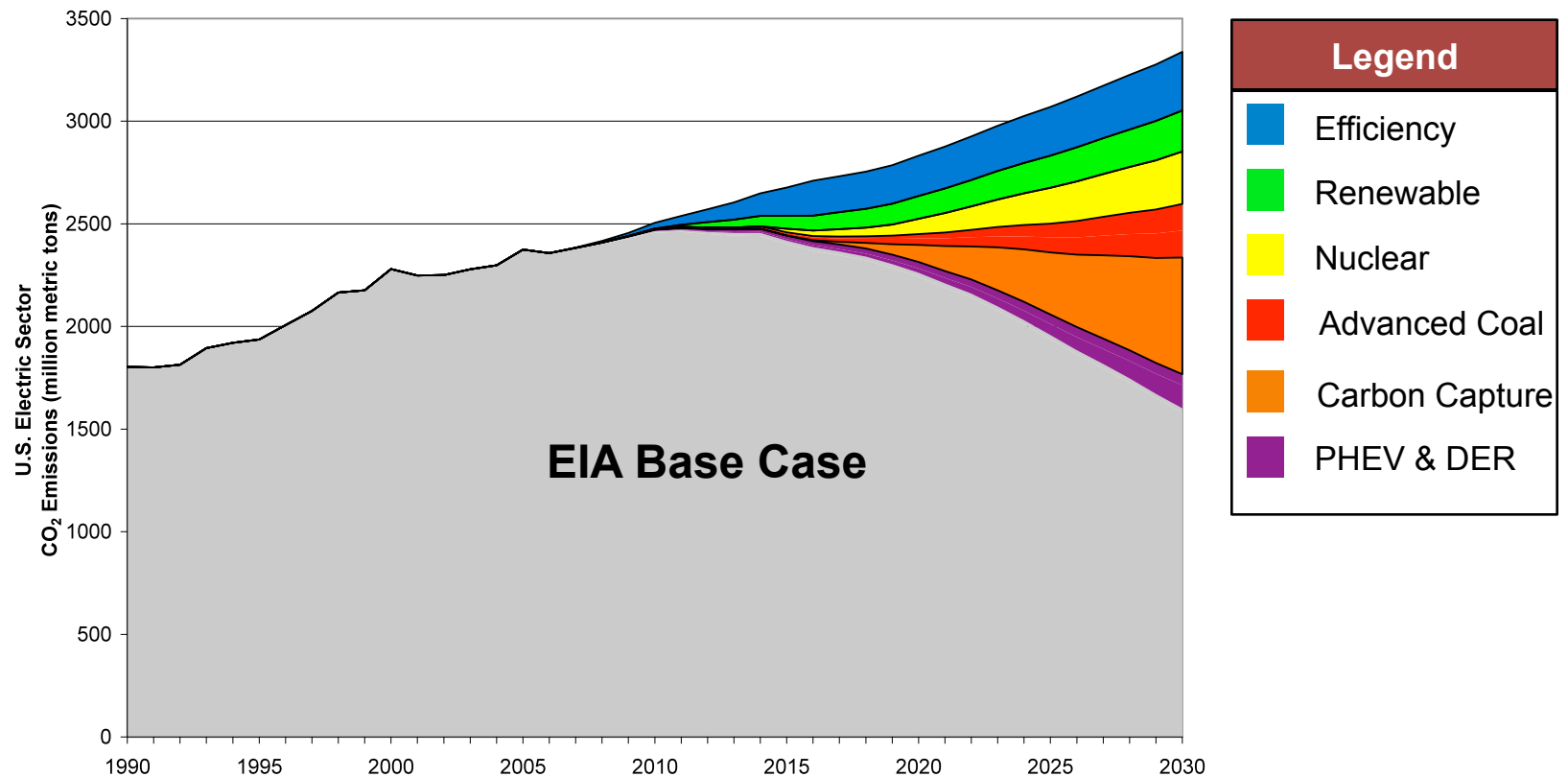
Electric power production causes approx. 39% of all U.S. carbon emissions

90% of petroleum is used for transportation and accounts for 29% of total US GHG emissions

The Power Generation / Efficiency Challenge

Meeting Expected Carbon Reduction Targets Requires a Combination of Strategies

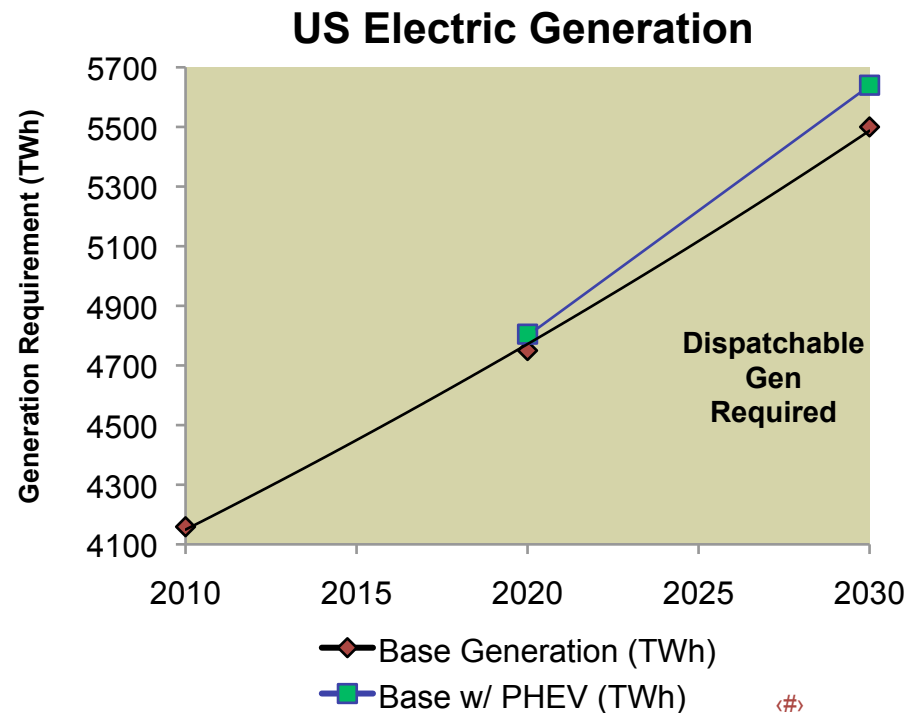
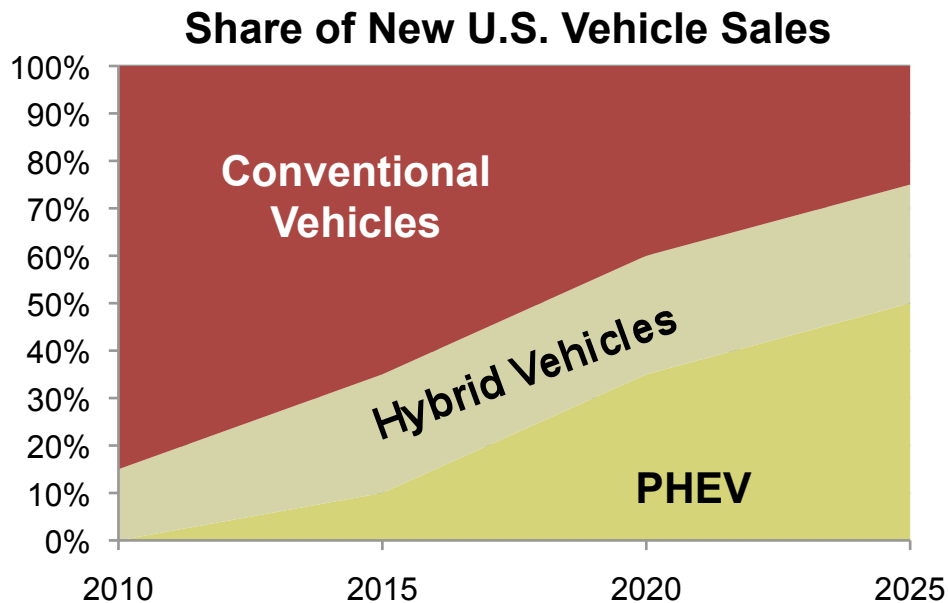
- A mix of generation and efficiency initiatives will be necessary to significantly reduce carbon production



The Transportation Challenge

The Shift in Transportation Energy Requirements has Significant Implications

- As conventionally-powered vehicles give way to hybrids and electric plug-ins, generation requirements will increase. Additionally, there is expected legislation from the Obama administration to link economic auto bailout funds on the ability to achieve scale production of PHEVs.
- The most conservative case, based on off-peak re-charging of PHEV's, is shown below.



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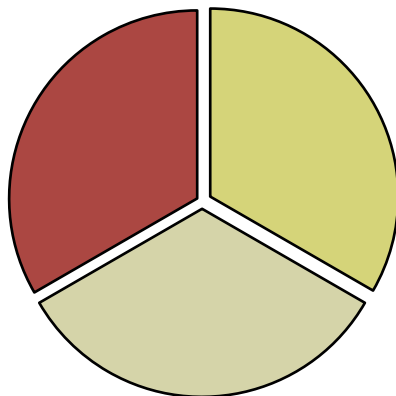
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Our Framework for Sustainability Planning

The Dow Jones View

- The Dow Jones Sustainability Index scores utilities in three dimensions:
 - Economic: Corporate Governance, Risk Mgmt, Codes of Conduct
 - Environmental: Eco-Efficiency & Reporting
 - Social: Human Capital Mgmt, Labor Practices, Philanthropy

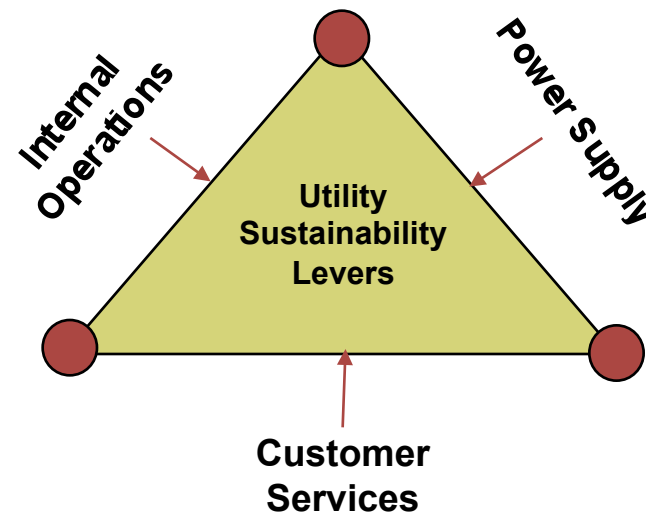
Dow Jones Sustainability Criteria



■ Economic ■ Environmental ■ Social

A Utility Point of View

- There are also three dimensions of sustainability for a utility company:
 - Power Supply: % Renewables, Avoided Carbon Production, PHEV Capacity
 - Internal Operations: Line Loss Optimization, Internal Use of Energy, Water, Materials,
 - Customer Services: Peak Time Rebates, Home Energy Mgmt, Demand Response Offerings.



Our Framework for Sustainability Planning (cont.)

These Two Views Suggest a Framework for Planning an Integrated Set of Initiatives

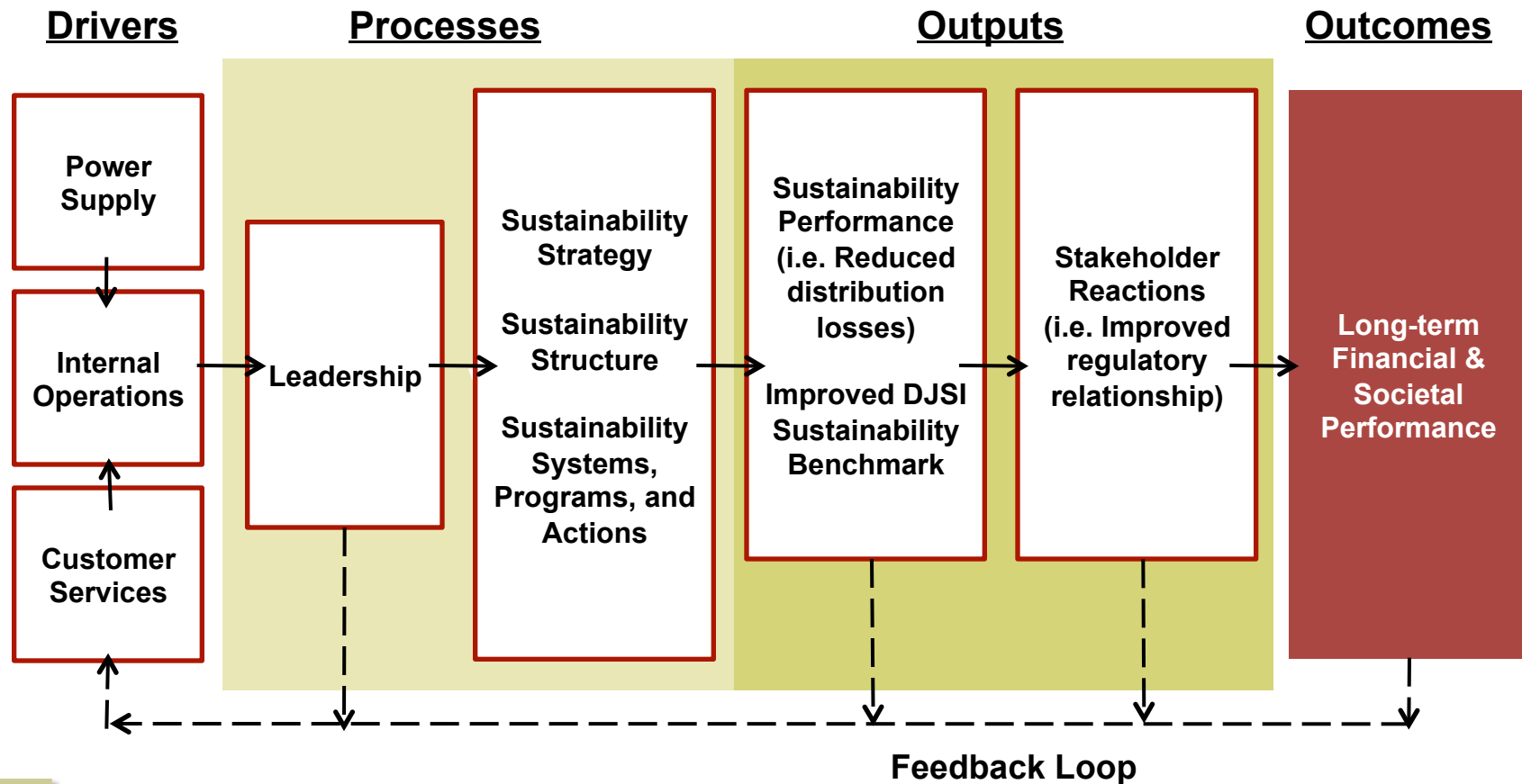
- The Dow Jones Sustainability Index categories form the vertical columns and the utility areas of opportunities for the horizontal rows. Sample initiatives are shown in each of the cells.

		Sample Initiatives		
		Economic	Environmental	Social
Utility Sustainability Levers	Power Supply	<i>Establish green DG offering and interconnections</i>	<i>Expand renewable investment portfolio</i>	<i>Offer 'Green Power' options</i>
	Internal Operations	<i>Minimize waste, maximize recycling</i>	<i>Lower consumption via AMI, systems automation, hybrids</i>	<i>Promote awareness & education</i>
	Customer Services	<i>Offer TOU rates / off-peak incentives</i>	<i>Implement DR, PTR, & Home Energy mgmt programs</i>	<i>Partner with other agencies (building /</i>

Our Framework for Sustainability Planning (cont.)

Sustainability Initiatives Must Provide Shareholder Return and Societal Benefits

- The enclosed Corporate Sustainability Model highlights the necessary governance and methodology to ensure success throughout the project lifecycle



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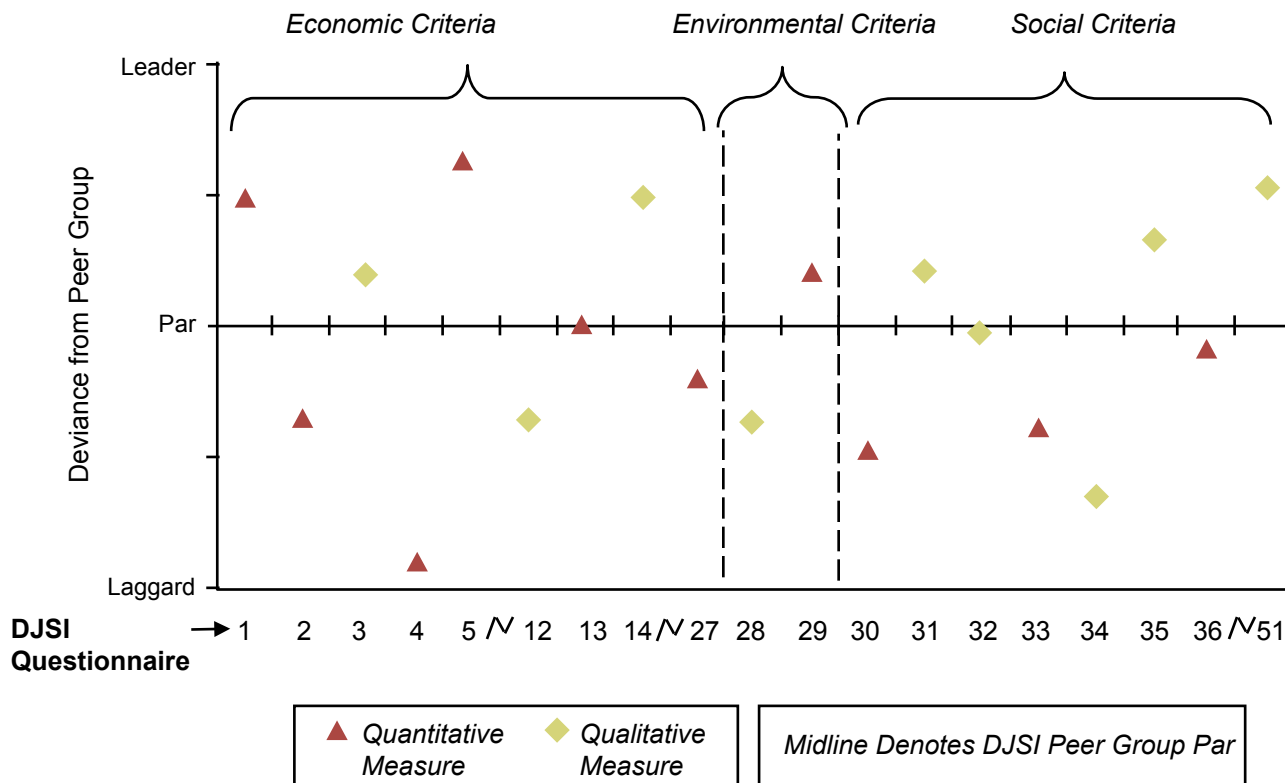
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Step 1

Sample Outputs: Benchmark Utility Against DJSI

An Initial Benchmark Study Against the Dow Jones Sustainability Index will Determine the Baseline for an In-depth Operations Assessment

- Additional indices can be used in addition to DJSI (i.e. Global Climate 100 Index)



Key DJSI Questions	
Econ.	1 Corporate Governance
	12 Risk / Crisis Management
Env.	28 Environmental Reporting
	29 Operational Eco-Efficiency
Social	30 Labor Practices
	51 Social Reporting

Sample Illustration



Step 2

Sample Output 2: Detailed Scoring Against DJSI

A Comprehensive Evaluation of Current Operations will Determine Areas for Improvement and Serve as a Sustainability Scorecard

- A simplified in-depth assessment from National Grid is shown below:

DJSI Segments	Sustainability Metric	Historical Performance	Current Performance
Econ.	Investing in the Future (£million)*	06: 4,288 07: 4,570	5,684
Env.	Energy Use (Million MWh)	06: 7.7 07: 6.5	5.7
	Waste (Million Tons)	06: 1.1 07: 1.2	1.1
	Water Usage (Million Cubic Meters)	06: 3.1 07: 3.6	3.5
	Greenhouse Gas Emissions (reduction against baseline)	06: 26% 07: 35%	38%
	Greenhouse gas emission intensity (Tons per £m of revenue)	06: 521 07: 471	457
Social	Community Investment (£million)	06: 7.7 07: 8.9	9.2

* Payroll costs, government taxes, dividends to shareholders, capital investment and community investment (excluding discontinued operations and return to shareholders through share repurchasing)

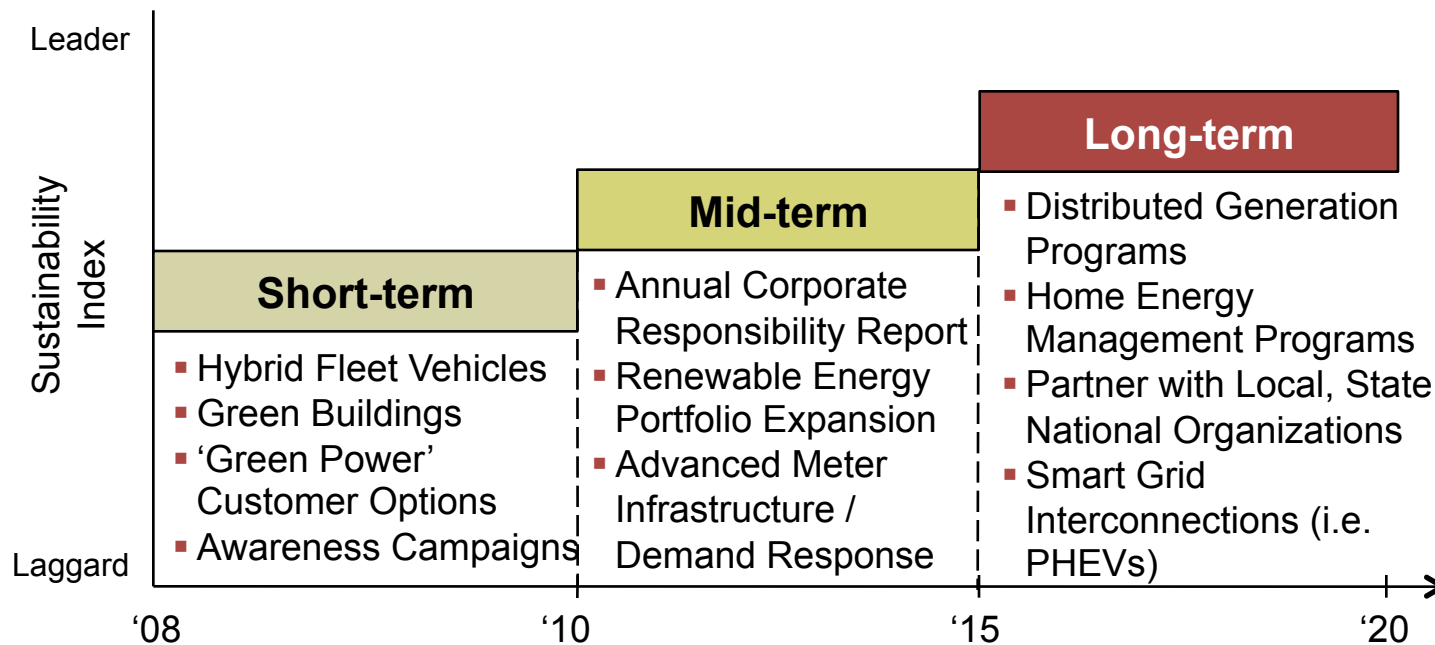
Source: www.nationalgrid.com

Step 3

Outline Long-term Utility Strategy

Sustainability Must be an Enterprise-wide Effort with Clearly Defined Goals and a Framework to Document Progress, Milestone Events, and Bottlenecks

- A set of short-term, mid-term, and long-term actions would be established to spur the transition to a long-term strategy
- Suggested metrics for tracking and reporting results would be developed



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Planning for Success

Bold, Persistent Action is Required to Effectively Manage Sustainability

- Managing sustainability in an effective and affordable fashion is an ongoing struggle for most utilities. Increasing energy costs, national economic concerns, and increased regulatory attention, are making the situation even more difficult. *Only a bold, persistent, multi-faceted effort will have any effect.*
- Sustainability must be an enterprise-wide effort with clearly defined goals and a framework to document progress, milestone events, and bottlenecks
- A sustainability policy must be integrated into core business strategies, and must reflect a clear understanding of operational requirements, industry trends, and stakeholder expectations.
- Executive leadership and sponsorship is essential to drive adoption by employees, create a “sustainability culture”, and achieve long-term success.
- Carbon legislation is inevitable. Forward-thinking utilities will align strategies with sustainability trends to capitalize on new revenue streams such as those derived from conservation services, renewable energy sources, and PHEVs.



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