

How Do European and U.S. Energy Sectors Address Climate Change?

A Comparative Study of the Role of Corporate Social Responsibility

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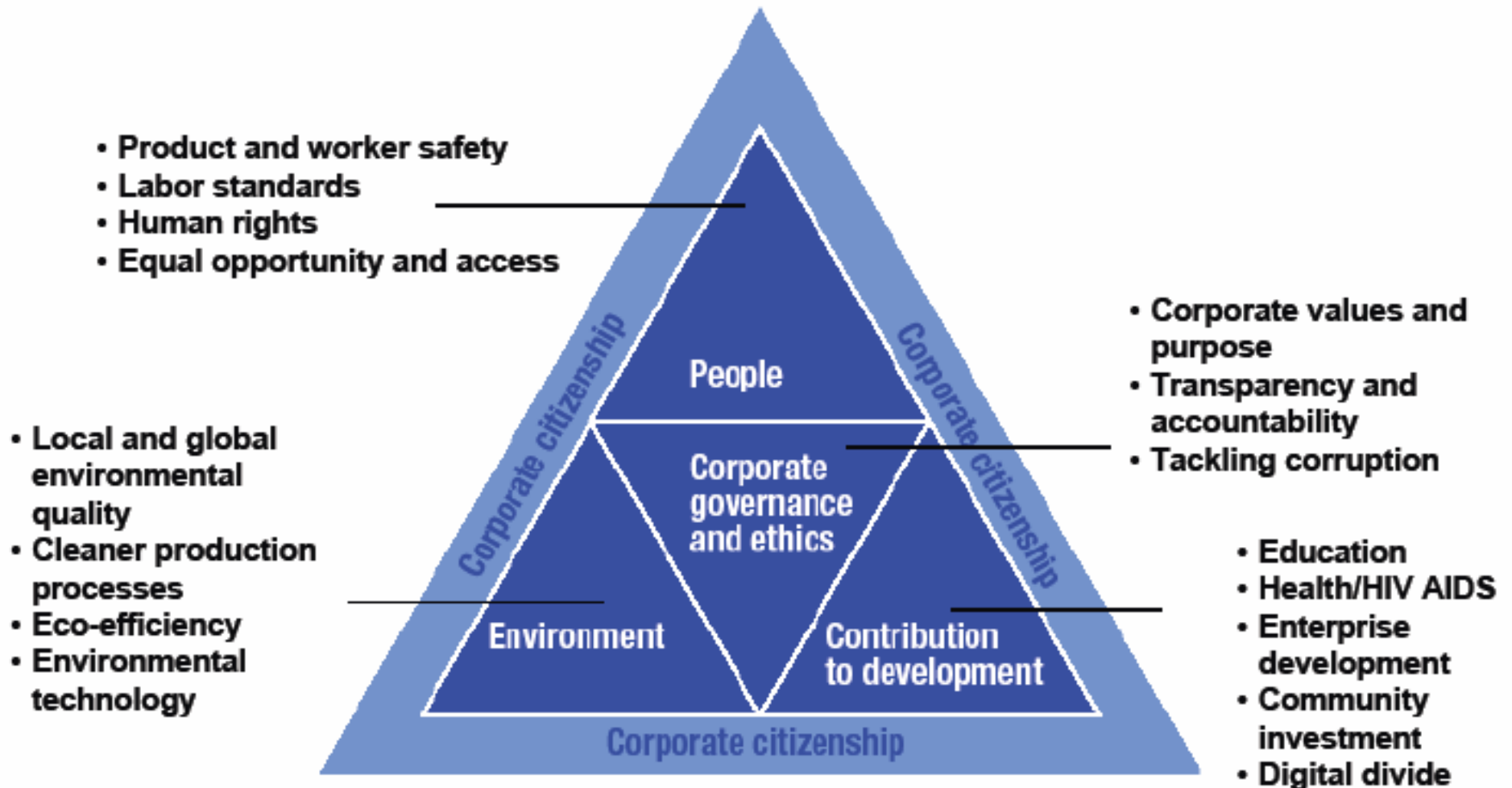
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Plan

- Corporate Social Responsibility & voluntary self-regulation
- US and European policy on CO₂ emissions and renewable energy
- US and European energy firms (petroleum and utilities sectors)
- Sustainability and CSR performance of firms
- Conclusions

Corporate Social Responsibility (Corporate Citizenship)



Source: World Economic Forum CEO Survey on Global Corporate Citizenship

Corporate Social Responsibility

- CSR evolution:
 - 50s: “triple bottom line” (economic, social and environmental)
 - Friedman (1964): “the only responsibility of the firm is to make profits”
 - Adopted by a very few companies in the 70s
 - In 2000: United Nations launched the Global Compact (“being beyond the law”)
 - In 2001: European Union launched the Green Chart
 - Since 2000, large waves of (sector-dependent) adoptions
- Shifts:
 - From shareholders to stakeholders
 - From “moral perspective” to “enlightened self interest perspective”
- American vs. European views of CSR
- Recurrent issue: CSR as ‘soft law’ vs. CSR as ‘hard law’



Questions

- Does the increasingly widespread corporate reliance on environmental and social self-regulatory schemes may be / is becoming a useful instrument in the reduction GHG emissions?
- How far can we expect voluntary initiatives to take us?
- Are the US-based and Europe-based energy firms' policies different?

Why firms are going 'beyond the law'?

- Uncertainty regarding future regulation; a role in shaping the future regulation
- Competitive advantage
- Growing concern and support on climate change and renewable energy from investors
 - Carbon Disclosure Project, Insight Investment, Sustainable Asset Management Group, Climate Change Capital Carbon Funds
- Public opinion awareness of the climate change issue
- Consumers' willingness to pay for green energy

Industry self-regulation

- WBCSD and Chemical Manufacturers Association (CMA): there is little need for regulatory intervention; self-regulation is effective;
- Larger the firms, more voluntary environmental strategies (higher risks and unpredictability, higher visibility, higher external scrutiny) [Greening & Gray, 1994];
- No evidence that industry self-regulation is effective (e.g. Responsible Care program of the CMA) [King & Lenox, 2000];
- Explicit sanctions (and incentives) administered by informed outsiders may be needed to avoid opportunism within an industry self-regulatory scheme [Lyon & Maxwell, 2002].

How firms react to emerging social and environmental issues? (1)

- Early stage reaction to divergent institutional pressure:
 - Home country effect
 - Local context influences
 - Firm's history and culture; e.g. past experience of losses associated with alternative energy sources
 - E.g. Shell (1990s): Shell Europe accepting the need for internationally agreed GHG emissions controls while Shell US was still a member of the Global Climate Coalition

How firms react to emerging social and environmental issues? (2)

- Later stage reaction to convergent pressure:
 - Participation to the global industry
 - Difficult to manage various (sometimes contradictory) local policies
 - Climate change issue itself
 - Institutional influences are stronger under conditions of uncertainty (managerial discretion is higher when the economic consequences of actions are unclear)

US policy on CO₂ emissions and renewable energy

- In the past, abundant energy supplies (energy self-sufficiency)
- Low costs of conventional electricity and fossil fuels and low retail electricity rates (US per capita demand is twice the EU demand)
- Low population densities => smaller perceived environmental impacts
- Low public awareness about environmental issues
- No federal regulation on CO₂ emissions

But:

- Early leader in renewable energy development (1978 Federal Public Utility Regulatory Policies Act)
- Inconsistent industrial policy toward renewable energy (large subsidies abruptly cut)
- Since 2002, 28 states have adopted financial incentives and mandatory regulations to promote the use of renewable energy including the Renewable energy Portfolio Standards (RPS).
- Regional agreements to control GHG emissions (Nine Northeastern states, California, Oregon, and Washington)
- CO₂ cap and trade type mechanisms
- 772 mayors from 50 states (+77 million citizens in a bipartisan coalition to curb GHG emissions). Goal: meet what would have been the US requirements under the Kyoto Protocol

European policy on CO₂ emissions and renewable energy

- Position changed towards a frontrunner in the run-up to Kyoto
- 1997: non-binding White Paper ‘Energy for the Future: Renewable Energy’
- 2000: Green Paper ‘Towards a European strategy for the security of energy supply’: (double the share of renewable energies in gross domestic energy consumption)
- 2002: EU-wide trading scheme
- 2007: Directive on Renewables
- High carbon taxes on fossil power production led to high fuel efficiency in production/consumption processes
- Variety of energy solutions between countries
- Strong public opinion and governmental engagement supporting an active climate policy

Profile of US and European energy firms

■ Petroleum sector:

- Highly dominated by large firms (top 25 companies worldwide in 2006 accounting for \$3.5 trillion in revenue)
- We study the 7 firms US based and 6 firms European based among the top 25

■ Electric utilities sector:

- Europe: highly aggregated sector: large companies resulting predominantly from the consolidation of formerly government-owned companies: 'the eight brothers'
- US: highly fragmented sector: more than 3,000 utilities
- We study the top 10 firms US based and top 10 European based

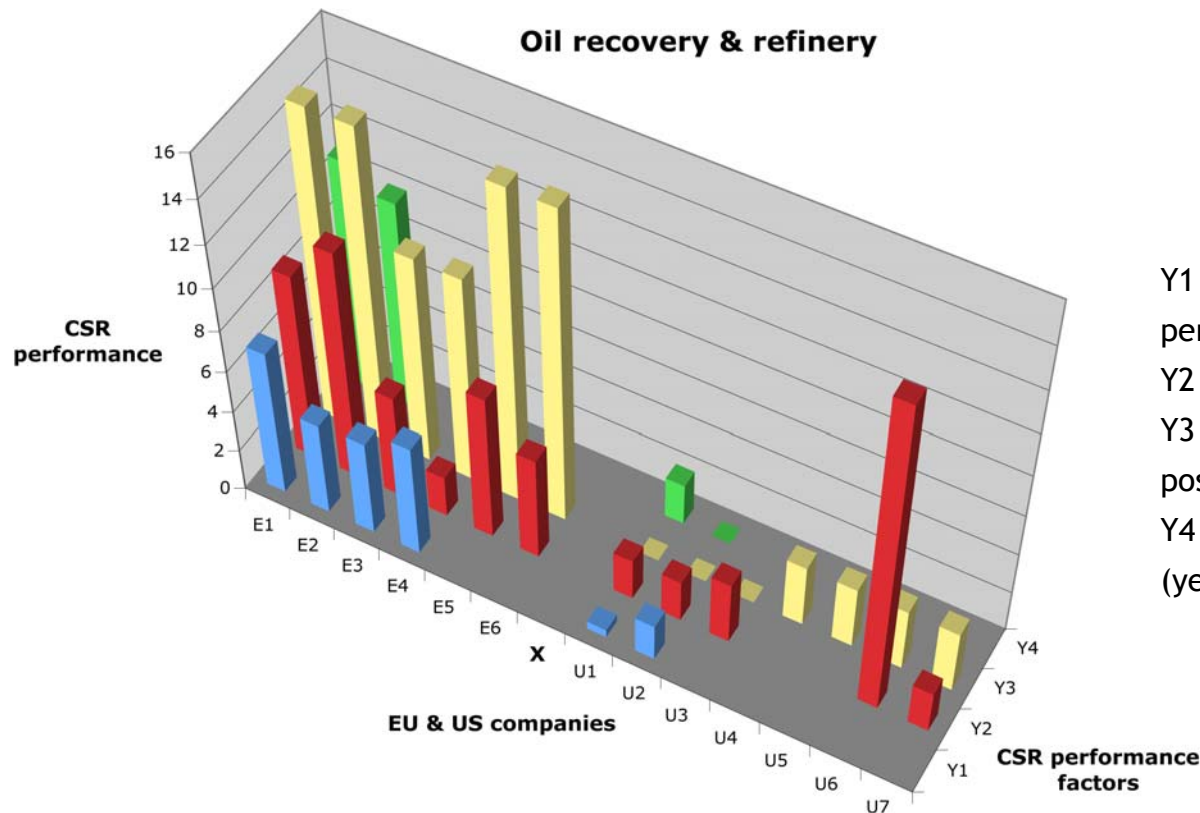
Major petroleum recovery and refining companies in the EU and the US

ID	Company	Revenues (\$ million)	Investments in renewables	CSR report since	Attitude towards Kyoto
EUROPEAN FIRMS					
E1	Royal Dutch Shell	306,731.0	\$1,500 million in 1997-2005	1997	Broadly supportive
E2	BP	267,600.0	\$900 million in 1999-2005 + \$500 million 2005-2010	1999	Broadly supportive
E3	Total	152,360.7	\$350 million 2005-2010	2003	Supportive
E4	Eni	92,603.0	\$200 million in 2005-2010	2006	Supportive
E5	StatoilHydro	68,281.7	Yes (CCS, wind, biofuel)	2001	Broadly supportive
E6	Repsol YPF	56,424.0	Yes (no details)	2003	Broadly supportive
US FIRMS					
U1	Exxon Mobil	339,938.0	\$100 million in 2005-2015	2006	Opposed
U2	ChevronTexaco	189,481.0	\$188 million in 1999-2006	2006	Opposed
U3	ConocoPhillips	166,683.0		2005	Opposed
U4	Valero Energy	91,051.0		No	
U5	Marathon Oil	60,643.0		No	
U6	Sunoco	36,081.0		Endorsed CERES in 1993	
U7	Amerada Hess	28,720.0		2006	

Major utilities in Europe and US

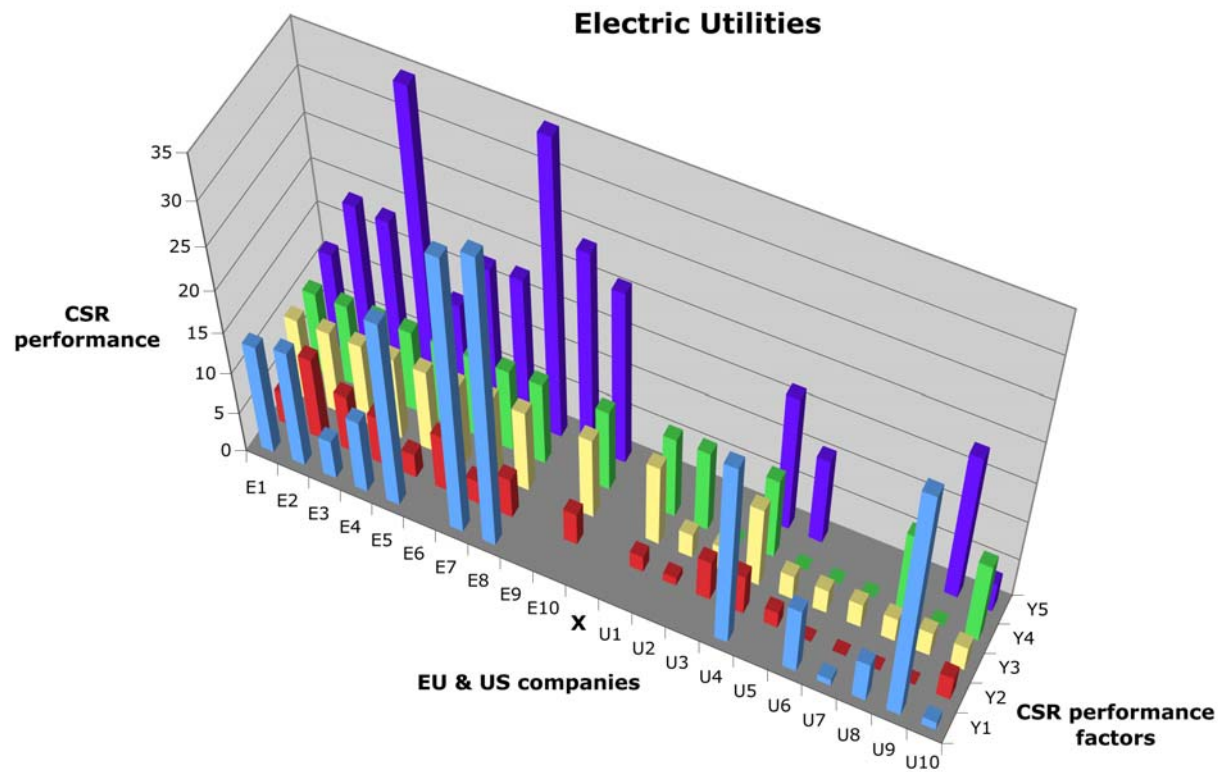
ID	Company	Revenue (billion)	Number of customers (million)	Generation capacity (MW in 2005)	Renewable generation capacity MW (%)	New investments in renewable (\$)	CSR reporting since	Attitude towards Kyoto	Green Plan offered to customers
EU FIRMS									
E1	E.on	67.75	40.0	53,508	6,208 (11.6%)	4.5 bn (by 2010)	2004	Supportive	GreenPlan
E2	EDF	63.43	38.2	130,776	24,547 (18.8%)	4.5 bn (by 2010)	1998	Supportive	Green Energy Tariff
E3	Suez	63.18	200.0	60,000	5,381 (18.5%)	1.5 bn by 2010	2001	Supportive	Electrabel Green
E4	Enel	55.37	32.0	42,216	16,672 (34.7%)	2.5 bn (by 2010)	2002	Supportive	Energia Pura
E5	RWE	44.25	2.0	43,269	5,021 (11.6%)	1 bn per year	2003	Supportive	nPower Juice
E6	ScottishPower + Iberdrola	28.60	5.2	40,000	7,000 (17.5%)	0.225 bn 2005	2006 & 2001	Supportive	Green Source
E7	Endesa	22.65	10.5	45,908	8,162 (17.8%)	3 bn (by 2009)	2005	Supportive	Tarifa Electrica Verde
E8	Vattenfall	17.28	4.9	32,448	11,560 (35.0%)	6 bn (by 2015)	2003	Supportive	Vattenfall Green
E9	EnBw	13.00	6.0	14,366	3,447 (24.0%)		2000	Supportive	No
E10	Nuon+ Essent	12.00	5.0	3,904	820 (21.0%)	0.040 bn 2005	2004 & 2003	Supportive	NatuurStroom
US FIRMS									
U1	Duke Energy	18.94	4.5	37,000			2006	Call for federal gov. action	NC Green Power
U2	Dominion Resources	18.04		26,500			2007		NC Green Power
U3	Exelon	15.40	5.9	8,000			2001 (envir. safety)		No
U4	PG&E Corporation	14.52	5.0	10,634	(16.7%)	1 bn in 2006-2008 (in energy efficiency)	2003	Role in mandated controls on GHG in California	BlueSky
U5	Southern Company	14.36	4.3	41,000	(10.7%)	0.006 bn	2003 (envir. safety)		No
U6	American Electric Power	12.11	5.0	38,000		1 bn (FutureGen)	2006 + GRI		No
U7	First Energy	12.00				0.05 bn (2005-2010)			No
U8	Con Edison	12.00	4.8	1,668		0.335 bn	No		ESCO
U9	FPL	10.52	4.3	22,000	4,000 (18.2%)	\$1.5 bn	No		No
U10	Xcel Energy	9.80	3.3	16,000	588 (3.7%)	1 bn	2005		Renewable Energy Trust, WindSource

Sustainability and CSR performance for the main petroleum recovery & refinery companies in Europe and US



Y1 = relative investment in renewables per year (% x 10)
 Y2 = CSR reporting (years)
 Y3 = Kyoto attitude (supportive=10, no position=3, opposed=0)
 Y4 = carbon trading scheme implemented (years)

Sustainability and CSR performance for the main utilities in Europe and US



Y1 = relative yearly investments in renewables (%)
 Y2 = CSR reporting (years),
 Y3 = Kyoto attitude (supportive=10, no position=3, opposed=0)
 Y4 = carbon trading scheme implemented (years)
 Y5 = relative renewable generation capacity (%)

Conclusions

- While firms in the energy industry commit to different levels of environmental protection, there is convergence in the firms' climate strategies and investment in renewables
- Emerging CO₂ regime is a complex patchwork of voluntary and mandatory measures (e.g. joint business-government partnerships such as the FutureGen coal plant)
- Self-regulation is a complement to regulation, not a substitute
- But the threat of unavoidable future regulation is a significant factor in motivating corporate voluntary actions
- The threat of future legal liability is serving the same function