

The state of climate policy in key international markets

Commercial Property Workshop – Existing Buildings Series

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Sustainability Phase Model

Dunphy and Benn

- Rejection
- Non-responsiveness
- Compliance
- Efficiency
- Strategic pro-activity
- The sustainable corporation

Overview of topics

1. State and trends of climate change policy on office buildings in international markets
2. Case studies – (a) the UK and (b) white certificate schemes
3. Impact of the carbon market on office buildings
4. Projections for the future

State of office energy consumption

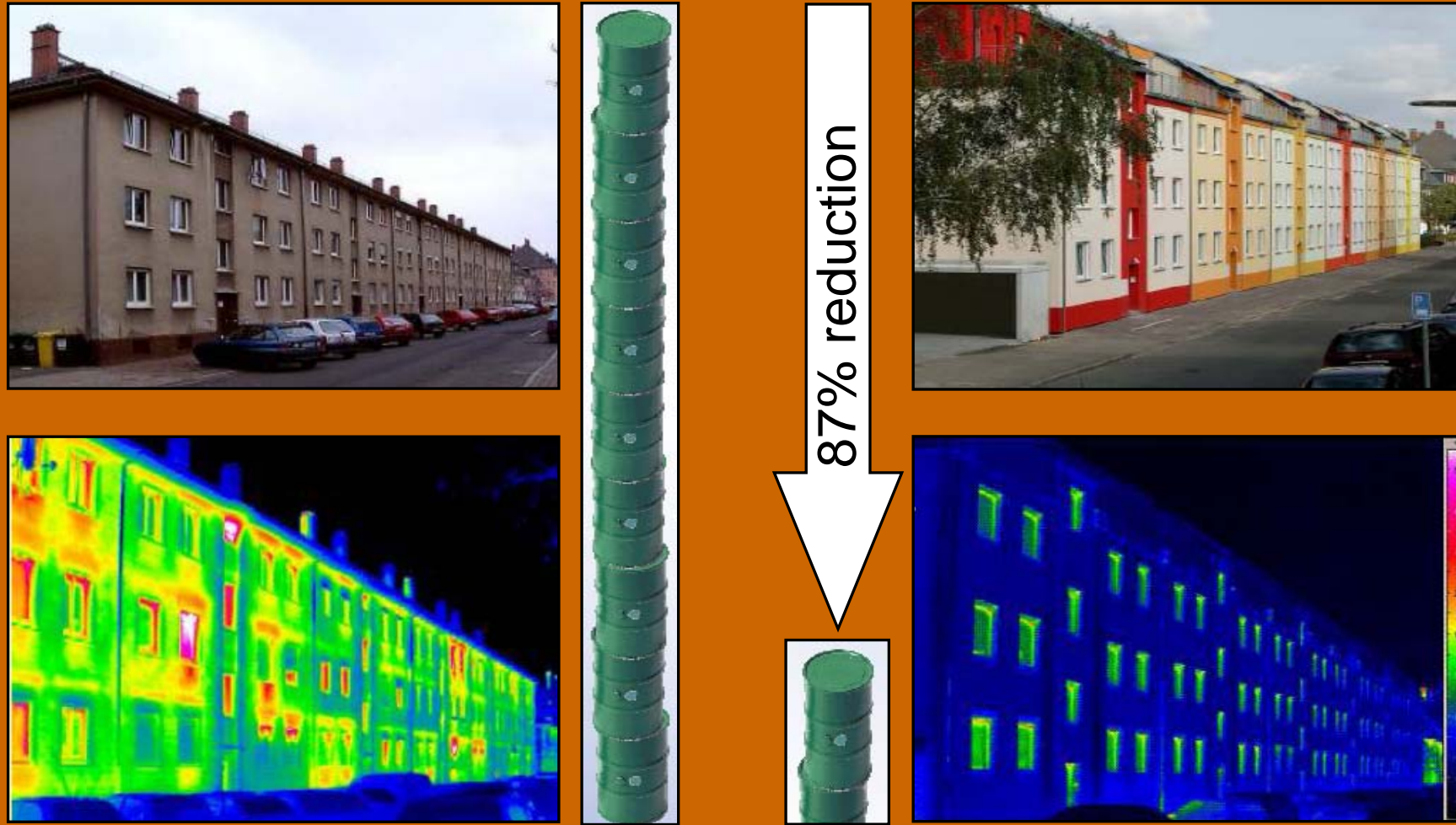
- World energy demand
 - 7,500 Mtoe (million tons of oil equivalent) per year
 - buildings account ~30-40% of worldwide energy use (2,500 Mtoe per year)
 - energy consumption by the building sector has continued to increase since 1960s
- Commercial building demand
 - residential / commercial energy split varies across jurisdictions
 - typical breakdown of the non-residential sector (see right)

Breakdown of Surface and Energy Consumption by Subsector of the Non Residential Sector

Sub Sector	% of Total Area	% of Total consumption
Retail	24	23
Office	18	21
Sport Facilities	4	7
Education	20	13
Health Care	11	13
Hotel Restaurants	6	9
Residential Community Buildings	14	10
Transportation Buildings	3	4

Source: Atlas, 2006

Existing buildings can be improved

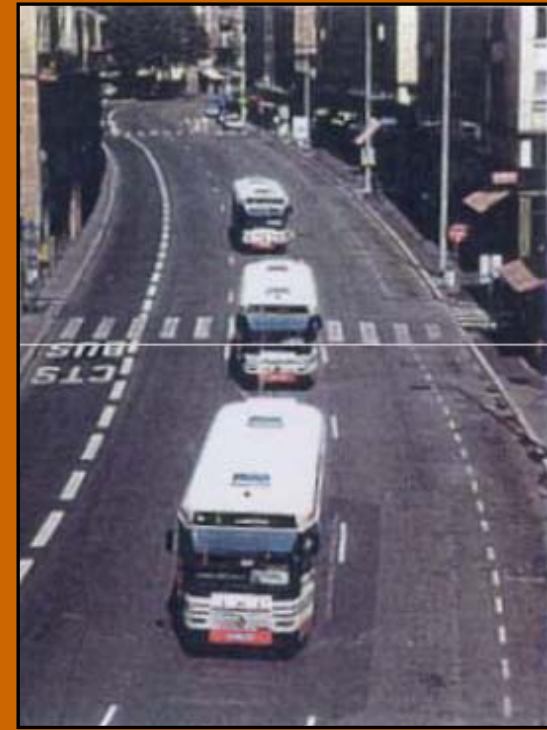
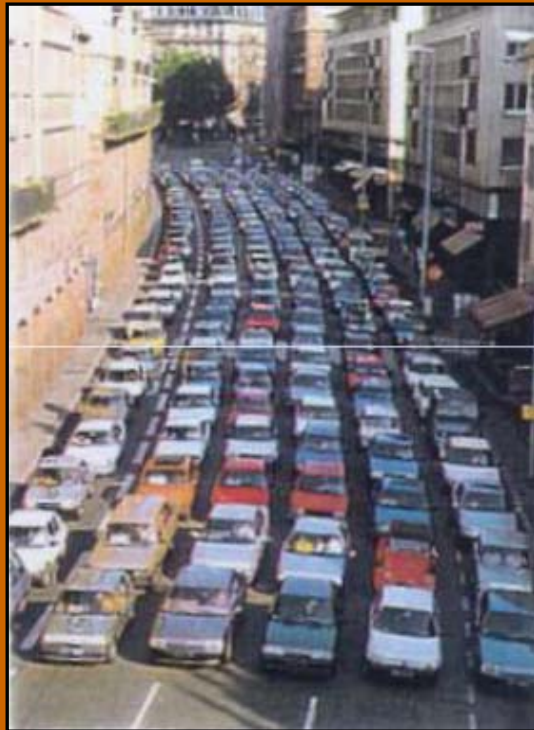


Frankfurt – refurbishment using passive house technology

Images courtesy of IEA

Effecting change

Change in efficiency requires change in attitude?



Drivers for change

- Legal and regulatory: mandatory accreditation requirements
- Commercial: minimum star ratings required by tenants, banks and government
- Social: increasing environmental awareness
- Political currency: a cynic's view?



Environmental measures affecting office buildings

Financial incentives

Mandatory upgrade of existing buildings

Cost of input energy



Cost of direct emissions?

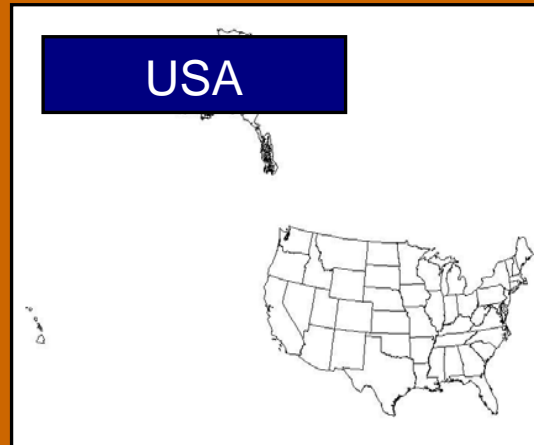
Restriction on the use of substances or appliances

Building regulations

Climate change policy matrix



Key jurisdictions



- Historically incentive-based, voluntary schemes
- More recently, regional ETS schemes have been developed and a step-change is imminent with the change of presidency
- RPSs and EEPs are also in place on a regional basis

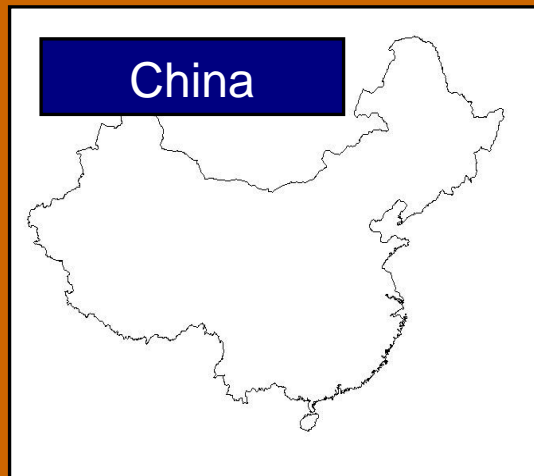


- Historically similar to the US model
- More recently, overarching targets and policy initiatives have been set in motion
- Cf. ability of Canada to achieve its Kyoto targets?

Key jurisdictions



- Review of the Building Code
- Recent developments include
 - the development of the NZ ETS
 - the intention to achieve 90% renewable energy by 2020



- 95% of existing buildings in China are energy intensive, consuming two or three times as much energy as that in most industrialised countries
- However, ambitious energy goals have been set (cf. Renewable Energy Law)

Key jurisdictions



- European Directives
 - energy performance in buildings
 - other directives with direct or indirect impact (e.g. construction products, RE targets)

- EU ETS



- Energy Conservation Law
 - reporting obligations
 - energy conservation measures required, including on rebuilds / extensions
- Incentives (e.g. subsidies) in place
- No mandatory emissions trading scheme, but cf. recent developments and JVETS

Comparative case study – the UK



- Implementation of the EPBD
- Other measures that may influence office stock
 - EPCs, DEC
 - Carbon Reduction Commitment
 - enhanced capital allowances Climate Change Levy, Renewables Obligation, etc
- State of building stock
 - non-residential buildings responsible for 25% of carbon emissions
 - new build / existing split 1.5% / 98.5%

Climate change policy in key international markets

Country	Emissions reduction target	Renewable Energy	Energy efficiency	ETS in operation?
United States	<ul style="list-style-type: none"> no specific federal targets yet, but proposed long-term target ranges from 'none', to 70% below 2050 levels, or 450ppm 	<ul style="list-style-type: none"> no specific federal targets yet, RPS targets have been created in 29 States so far 	<ul style="list-style-type: none"> no specific federal targets yet, EEPS are in place 	<ul style="list-style-type: none"> Regional in place Federal proposed
Canada	<ul style="list-style-type: none"> 20% reduction in greenhouse gases from 2006 levels by 2020 ~60-70% reduction by 2050 	<ul style="list-style-type: none"> 20x increase electricity from renewable sources (e.g. wind and wave power) 9 Provinces have targets 	<ul style="list-style-type: none"> Improvement of 20% required 	<ul style="list-style-type: none"> Regional in place Federal proposed
Europe	<ul style="list-style-type: none"> 2008-2012: overall EU cap at 8% below 1990 levels Pledge of 20% emissions reduction by 2020 rising to 30% if other nations sign on Long-term target: 60% reduction below 1990 levels by 2050 	<ul style="list-style-type: none"> 20% of the EU's energy from renewable sources by 2020 	<ul style="list-style-type: none"> Improve the EU's energy efficiency by 20% by 2020 	<ul style="list-style-type: none"> Yes
Japan	<ul style="list-style-type: none"> Acknowledgement of mid-term targets by 2020, no specified goal ~50% reduction by 2050? 	<ul style="list-style-type: none"> 1.63% renewable energy share by 2014 	<ul style="list-style-type: none"> Year-on-year improvements required by certain companies 	<ul style="list-style-type: none"> Voluntary, but mandatory ETS proposed
New Zealand	<ul style="list-style-type: none"> see renewable energy target 	<ul style="list-style-type: none"> 90% renewable electricity by 2025 	<ul style="list-style-type: none"> Rate of improvement increased from 0.5% to 0.7% p/a by 2012 	<ul style="list-style-type: none"> Imminent start
China	<ul style="list-style-type: none"> no specific targets yet, but cf. recent developments 	<ul style="list-style-type: none"> 10% by 2010, 15% by 2020 	<ul style="list-style-type: none"> 20% improvement over 2006 by 2010 	<ul style="list-style-type: none"> No
United Kingdom	<ul style="list-style-type: none"> 12.5% below its 1990 levels under EU Burden Sharing Agreement cf. Climate Change Bill: 60% reduction by 2050 	<ul style="list-style-type: none"> 15% of the EU's energy from renewable sources by 2020 	<ul style="list-style-type: none"> 9% over the period 2008 to the end of 2016 (and see the EU target above) 	<ul style="list-style-type: none"> Yes

White certificates – background

- Rationale and function
 - a “market based instrument” (MBI) – markets using transferable property rights to effect public policy (climate change)
 - economic justification, minimising cost (static efficiency) and creating innovation incentives (dynamic efficiency)
 - white certificates as distinct from other MBIs



Developing white certificate schemes

- Key elements
 - setting the target (identifying the goal)
 - setting the rules of the game (apportioning responsibilities, establishing architecture for the trading system)
 - monitoring the game (measurement, verification etc)
 - sanctioning non-compliance
- White certificate schemes in practice
 - Australian GGAS
 - Europe (Italy, France UK and others)
 - United States – an emerging voluntary market



State of the art and future developments

- Impact of white certificates on office buildings
 - ability of office holders to take part in white certification and trading
 - scope of energy saving measures under scheme design
- Future developments
 - current white certificate schemes differ markedly in design
 - certificates are not currently tradable between countries
 - standardisation of certificates (fungibility)

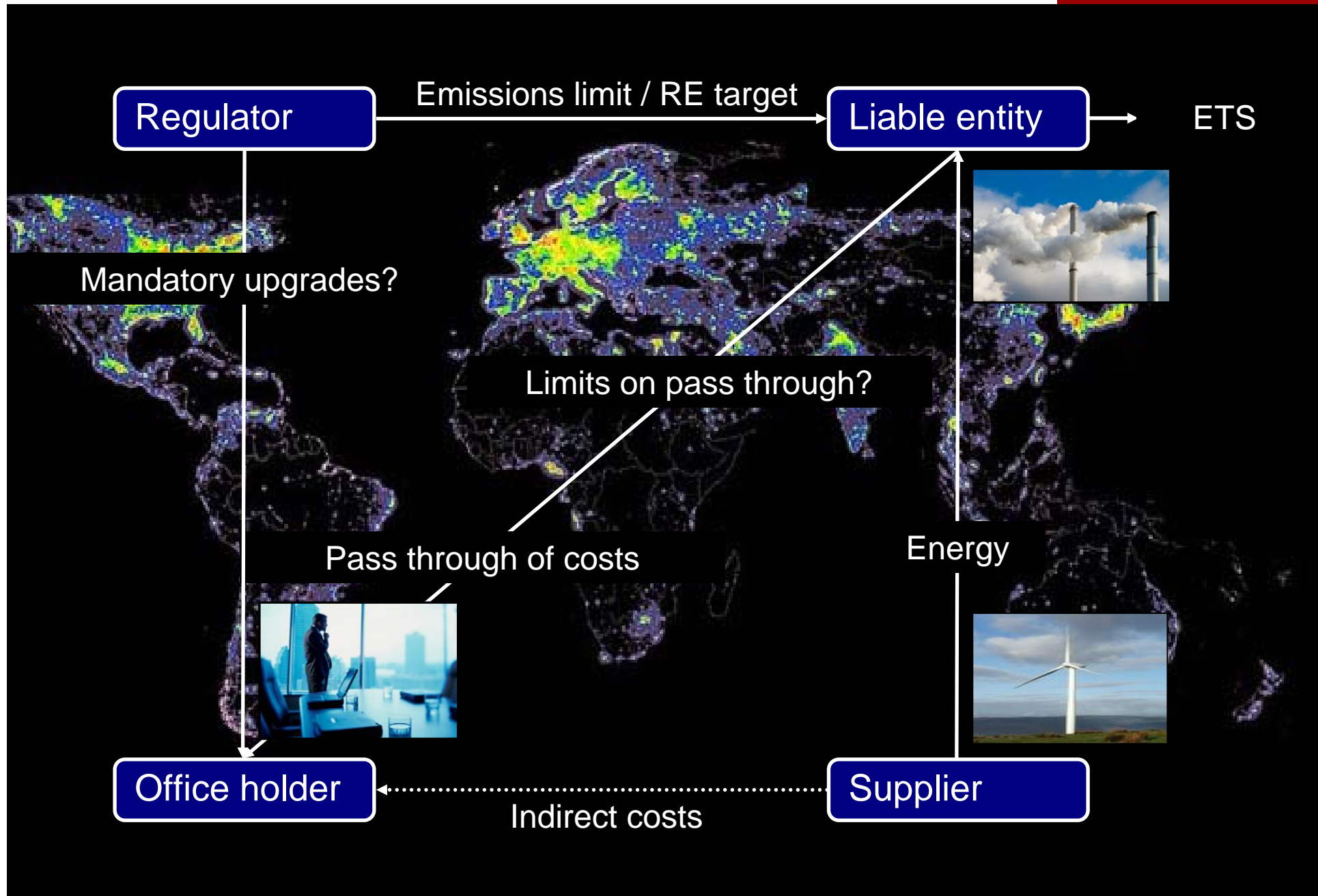


Impact of the carbon market

- ETS design and the impact on office stock
 - scope 1 - direct emissions, GHGs emitted from sources within the boundary of a facility and as a result of that facility's activities
 - scope 2 - indirect emissions - GHGs emitted from the production of electricity, heat or steam that a facility consumes, but that are physically produced by another facility
- On the assumption that offices remain in the uncovered sector:
 - what indirect impact will ETS' have on office stock?
 - how should you prepare for the future, in light of the carbon market experience and other developments?



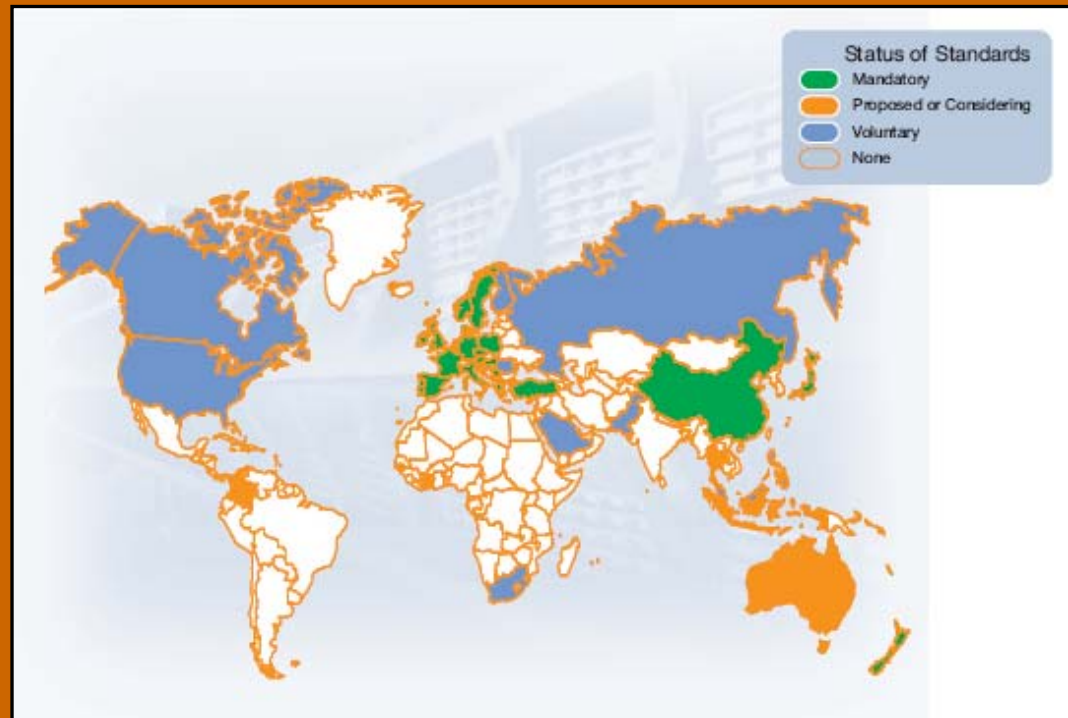
Climate change policy in key international markets



Likelihood of regulation

The pace of development is rapid

- both in carbon markets and other measures affecting office buildings
- a shift towards mandatory upgrades
- “...Experts fear one-upmanship in race to go green...”
- cf. European Commission backing away from idea of proposing EU-wide energy efficiency standards for buildings



Preparing for the future

(1) Analyse portfolio

- establish a benchmark
- distinguish between offices in different markets
- review termination provisions of contracts in key jurisdictions

(2) Review existing legislation in affected markets

- preparing for the future starts with a review of existing regulation
- review options available to reduce exposure
- consider carrots as well as sticks
- be aware of local peculiarities



Preparing for the future

(3) Establish objectives and targets

- limit your exposure in the most cost effective way
- pre-empt regulation, perhaps through private agreement (cf. green leases)
- take advantage of government assistance
- model best/worst case scenarios

(4) embark on “greening” REITs



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