CREATING LAW FOR NEXT GENERATION TECHNOLOGIES

- Professor Adrian Bradbrook

Law School

University of Adelaide, Australia

Specialist in Energy Laws for Sustainable Development

Summary

- The forces pushing next generation technologies
- Defining next generation technologies
- Why are legal management regimes essential?
- The contents of an international legal regime
- The contents of a national legal regime
- Difficulties in the way of reform

The forces pushing next generation technologies

- Climate change and carbon emissions
- Local smog and air pollution
- Sulphur emissions
- Energy security
- Access to modern energy services

Why are legal management regimes essential?

- Legal protection required for investors
- Legal responses are flexible, and include regulation, financial incentives and educatory measures
- To give credibility to new technologies

The contents of an international legal regime: Treaties

- UNFCCC
- Kyoto Protocol
- Energy Charter Treaty
- Protocol on Energy Efficiency

The contents of an international legal regime: Declarations

- Agenda 21
- Johannesburg Plan of Implementation
- G8 Gleneagles 2005 Plan of Action
- Beijing Declaration on Renewable Energy for Sustainable Development

International Legal Regime: The Way Forward

- Comprehensive soft law instrument promoting RE and EE (UNGA resolution)
- New international convention or protocol to existing convention to promote RE and EE
- Coordinating UN activities on RE and EE – need for specialist agency
- New international law concerning off-shore RE installations

National Laws -- need to differ between countries

- Nationalized / privatized energy industry
- Constitution (state/federal division of powers)
- Role of local governments
- Differing climate within each country
- Differing levels of economic development

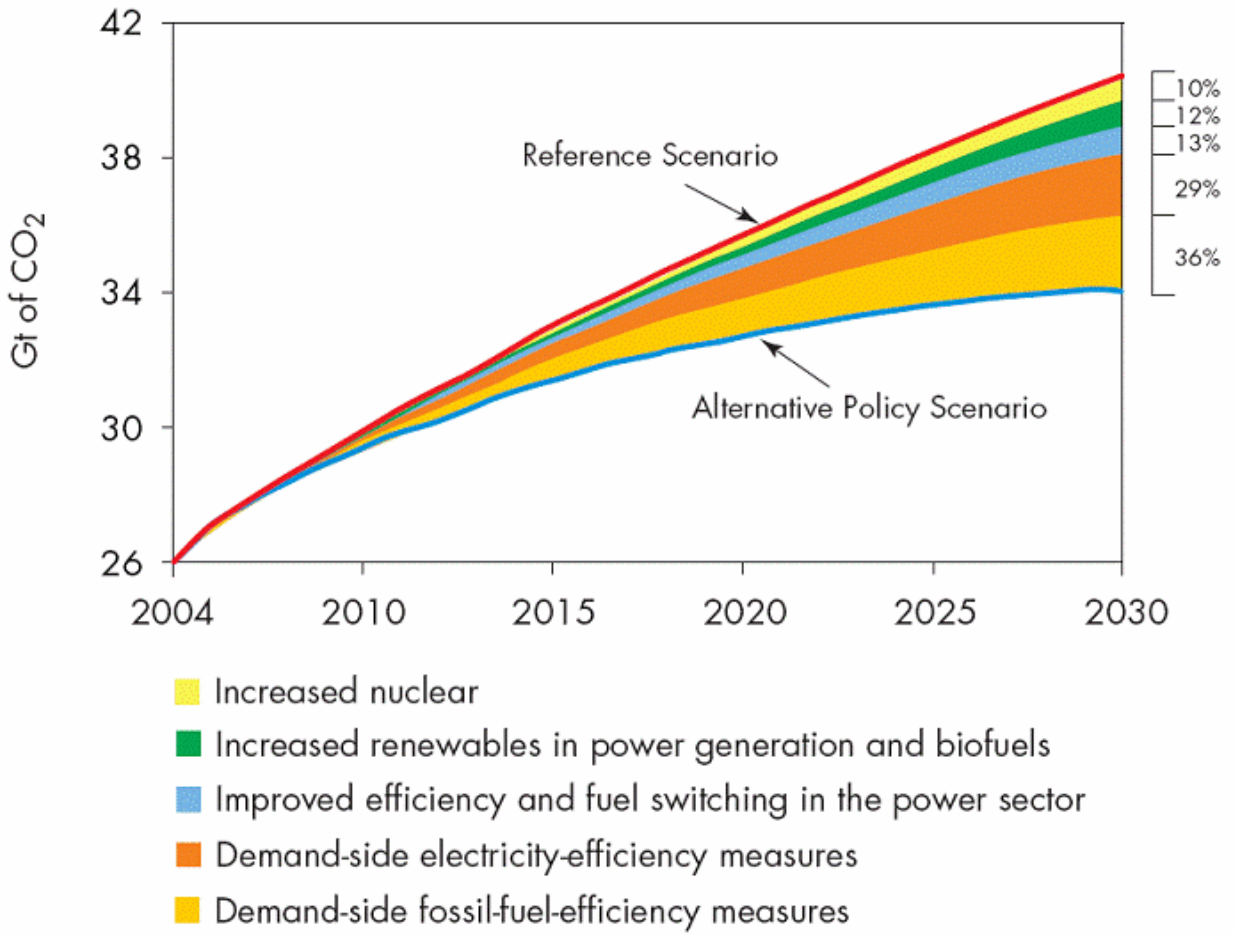
Role of new national laws

- Regulation
- Stimulation
- Education

The contents of a national legal regime

- Electricity (utility) laws to be created or modified to promote private renewable energy generation (feed-in laws; renewable portfolio standards, etc). AND
- Separate laws for each relevant technology (solar; wind; geothermal; hydro; biomass; CCS). AND
- Separate energy efficiency laws for each sector (buildings; appliances; industry; transport)

Global Savings in CO_2 Emissions in the Alternative Scenario Compared to the Reference Scenario



World Energy Outlook 2006

INTERNATIONAL ENERGY AGENCY

EE legal options – road transport (1)

- Planning and zoning laws to ensure that new development occurs so as to maximise public transport potential and to minimise travel within urban areas
- Planning laws to promote urban consolidation
- Various DSM measures to reduce the need and impact of urban travel: staggered working hours; deregulation of weekend working; “every car a taxi”; reduced parking spaces and increased fees; employees to pay income tax on company cars; FBT on firms providing company cars

Road transport (2)

- Fuel consumption labeling of private vehicles
- Fuel efficiency information to be included in all model-specific vehicle advertising
- Fuel economy standards for vehicle manufacturers
- Compulsory system of annual inspections for motor vehicles

Road transport (3)

- Feebate system, imposing higher sales tax on inefficient vehicles with tax rebates for efficient vehicles
- Skewing vehicle registration charges towards higher charges on inefficient vehicles
- Increasing petroleum excise tax
- Income tax rebates or credits on the purchase of vehicles that meet specified fuel economy standards

Road transport (4)

- Promote biofuels by offering financial incentives to farmers to grow the necessary crops
- Government support for the redesign of vehicles so that engines are capable of using a higher ethanol blend

EE legal options -- industry

- Statutory duty on utilities to adopt and support cogeneration schemes
- Establishment of system of energy officers
- Minimum efficiency or performance standards for specified industrial equipment
- Compulsory energy audits
- Each company required to spend annually a designated percentage of their payroll/profits towards implementing EE measures

EE legal options -- appliances

- Need to educate consumers and to increase consumer confidence

- Appliance labeling
- Energy standards for appliances
- Compulsory training for installers of EE appliances and/or trade accreditation system

Energy Consumption in Building Sector

- USA 39%
- EU 40%
- Australia 37%
- China 25%
- Brazil 20%

EE in New Buildings – Regulations

- Prescriptive standards in building codes (e.g.thermal regs for insulation materials – France; Canada). Local variations for climatic differences.
- EU Directive – minimum requirements for energy performance of buildings
- Boulder, Colorado – points system for sustainable energy in buildings
- Regulate only those buildings with high capacity energy consumption (Thailand)
- Distinguish residential and commercial building codes (?)

EE in Existing Buildings

- Declaration of EE measures installed on sale of premises (Australia)
- Inspection at time of resale, with retrofit requirements (US states)
- EE measures compulsory where an addition to a building increases the heated space by more than 10% (California)
- Compulsory EE measures wherever a building permit is required (various)
- Minimum energy performance standards for buildings over 1,000m2 on a major renovation (EU Directive)
- All residential buildings to be compulsorily retrofitted (San Francisco)

EE in Rented Buildings

- Ban master metering
- Ensure that energy is metered and charged directly to the end user (Russia)
- Declaration of previous energy bills incurred by earlier tenant (Australia)
- Amend law on lases to require landlords to install EE measures – costs to be shared according to the length of the lease (Australian proposal)

Building Components and Equipment -- Regulations

- Phase out incandescent lamps (Australia; China; Canada)
- Incandescent lamp efficiency standards (USA)
- Compulsory double-glazing (EU)
- Performance requirements for lighting (US-Energy Star program)
- Equipment standards for a/c units, water heaters, windows and doors (California)
-

Government and government-funded buildings

- Mandatory EE targets established
- Change procurement rules requiring purchase of lowest up-front cost, without consideration of energy consumption
- EE standards for government buildings
- Lamp efficiency standards

Energy Utilities

- Need for DSM. Utilities will not invest in EE if this makes them less profitable – need to regulate utilities to decouple revenue growth from increased sales
- Financial incentives for utilities to promote DSM
- Mandatory for utilities to actively promote EE to customers
- Utilities required to offer energy audits to customers (USA)
- Utilities required to achieve specified targets on domestic EE (UK; France)
- Utilities must invest 1% of their revenues in EE R&D programs (Brazil)

Solar energy

- Solar access protection (in many jurisdictions, not a relevant factor in planning decisions)
- Legal barriers – historic buildings; preservation of treed landscapes; need for building permit to install solar collectors; local authorities tree plantations outside properties)
- Covenants on land titles to enhance the amenity of a neighbourhood – height and setback requirements; appliances and installations on roofs prohibited. Legislation needed to discharge covenants in the public interest

Wind energy

- Different laws for on-shore and off-shore operations
- Application of local planning laws and inconsistent decisions on wind farm approvals
- Enactment of wind power guidelines for determination of planning issues
- Application of building laws for individual wind generators

Geothermal energy

- Complicated by different types of resource (underground heated water; HDR; magmatic reserves)
- Categorization of geothermal energy – mineral, gas or groundwater
- Clarification of ownership rights
- Management regime for exploration permits and production leases
- Comprehensive environmental protection measures

Carbon capture and storage

- Ownership rights to underground storage areas (saline aquifers or depleted reservoirs)
- Clarification of legal duties for CCS operators re storage operations
- Liability issues for accidental carbon release

Difficulties in the way of reform

- World population growth (9.4 billion by 2050)
- Lack of capacity building on energy issues in developing states
- Lack of international cooperation and policy development
- Vested business interests in “business as usual”
- Lack of (or inadequate) enforcement mechanisms

Enforcement of Laws

- Enforcement must be effective (random verification important; adequate financing of enforcement and monitoring).
- Enforcers must be motivated and well-trained (building inspectors concerned with fire/electrical safety can also enforce energy codes)
- Penalties must be effective (penalise directors as well as companies). Japan 1979 Law – names of offenders broadcast to the public.
- Laws must be well drafted
- Scope of law to be precise and targeted (avoid free-loaders)