

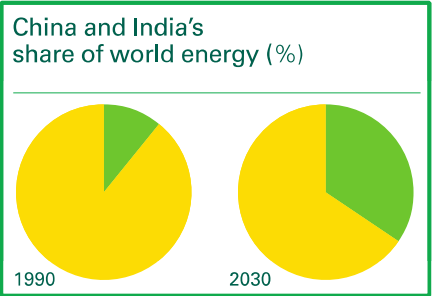
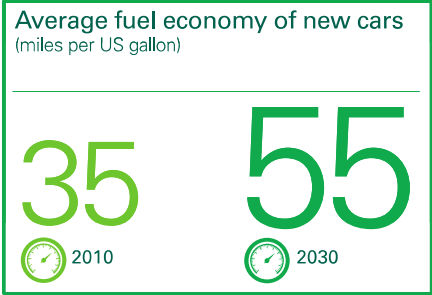
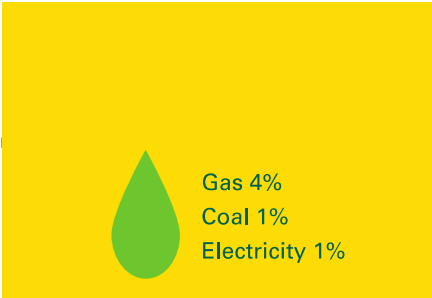
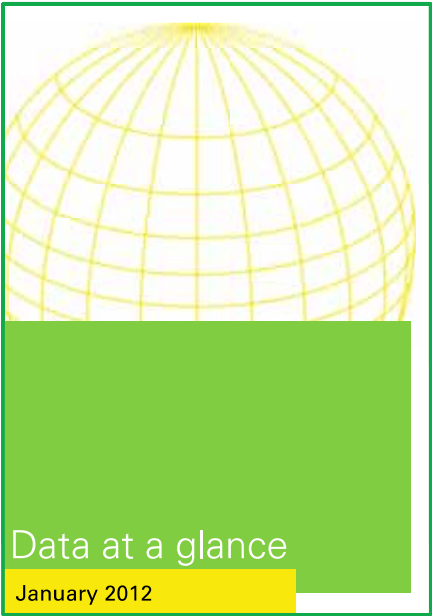
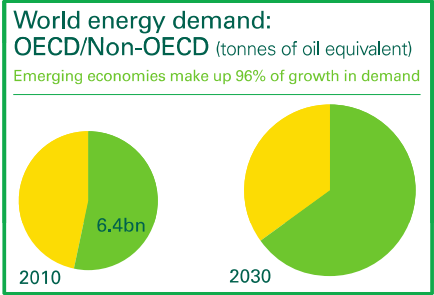
GLOBAL ENERGY GOVERNANCE TO  
ADDRESS GLOBAL CHANGE:  
CONCEPTS AND FUTURE  
IMPLICATIONS

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# ENERGY FUTURE (BP)



**Share of fuel 1990-2030**  
(% shares of world energy use)

	1990	2030
Renewables*	0.4	6.3
Nuclear	5.6	6.0
Hydroelectric	6.0	6.8
Coal	27.3	27.7
Natural gas	21.8	25.9
Oil	38.9	27.2



Energy drivers and the zone of uncertainty

2050

Underlying demand potential

Ordinary demand moderation



Zone of extraordinary opportunity or misery

2000

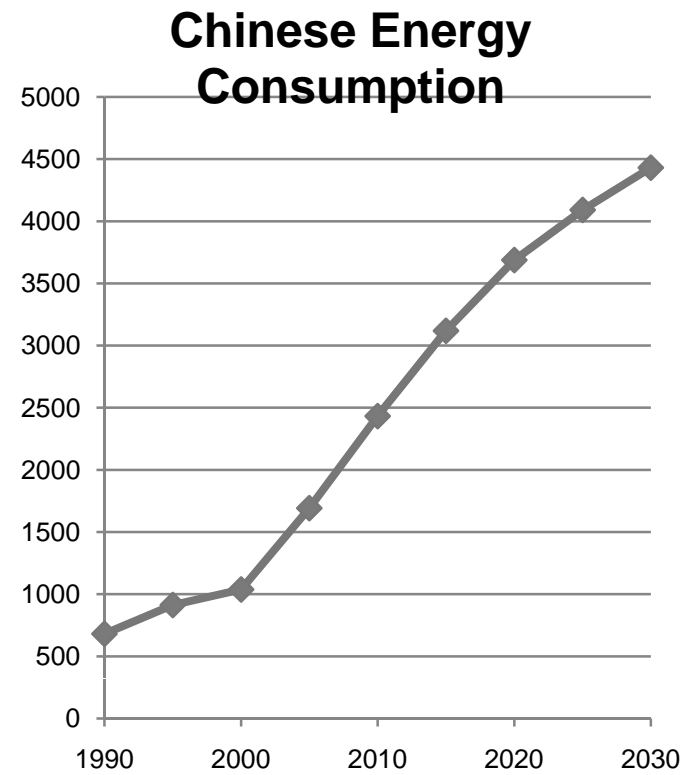
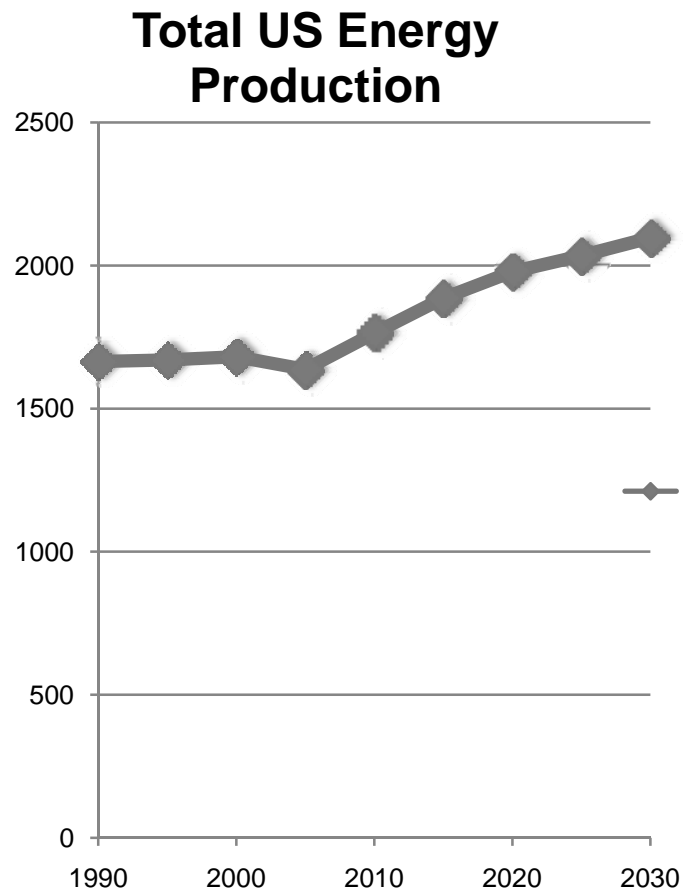
Energy supply/ demand balance

Ordinary supply developments

# ZONE OF UNCERTAINTY

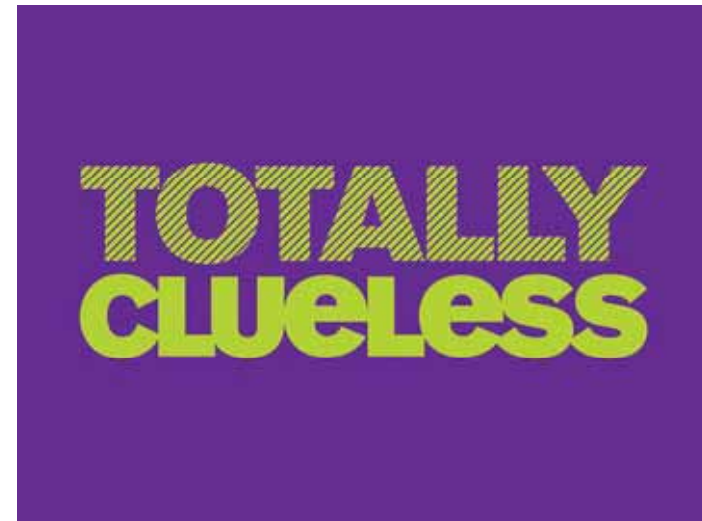
Shell scenarios

# THE "KNOWN UNKNOWNs"



# UNKNOWNNS: HOW TO ACHIEVE SIMULTANEOUSLY

- Energy services
- Geopolitical stability
- Environmental sustainability
- Good governance/human rights
- Poverty alleviation
- Cybersecurity
- Food security



# SECURITY



# ENERGY SECURITY



# GEG EFFORTS TO ADDRESS ENERGY SECURITY

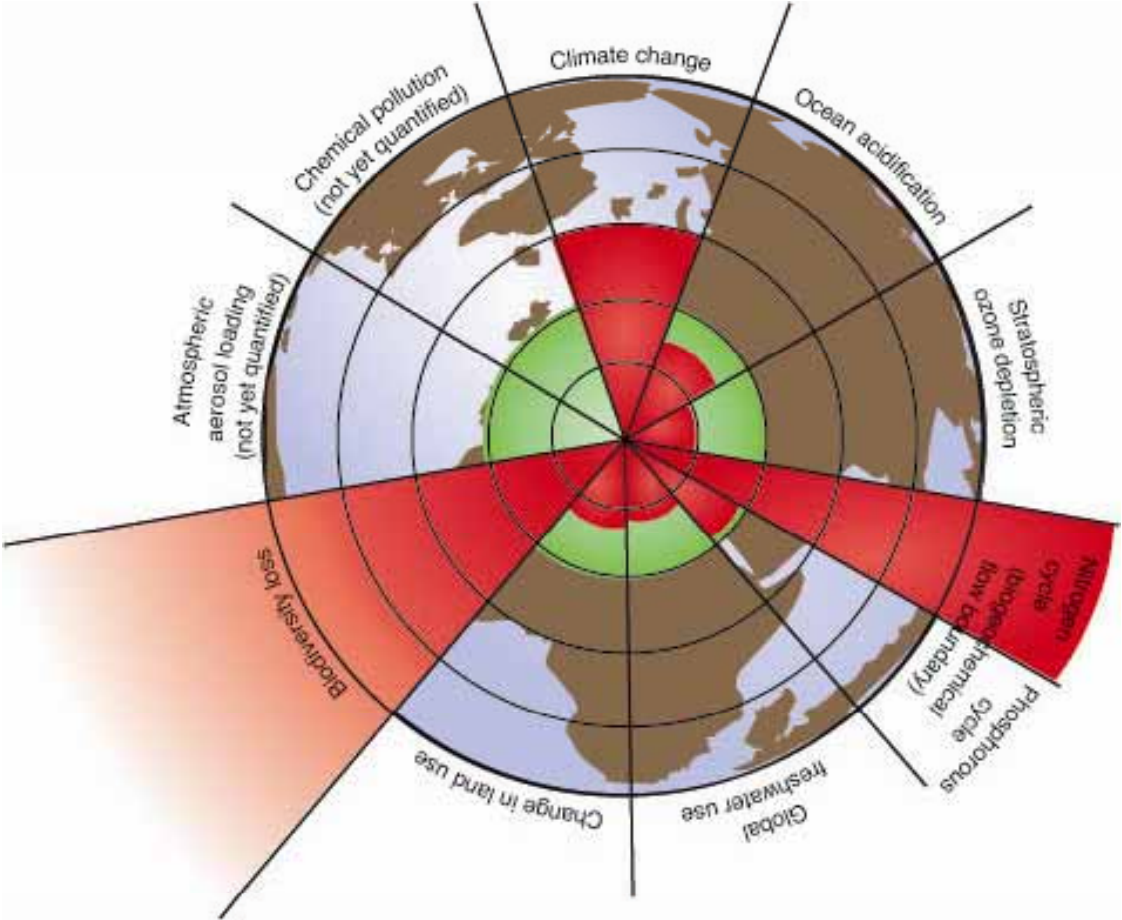
- 1. OPEC and International Energy Agency**
- 2. G8 and G20 statements**
- 3. International Energy Forum**



# ENVIRONMENTAL SUSTAINABILITY



# PLANETARY BOUNDARIES



# ENERGY POVERTY



# GOVERNANCE



# HUMAN RIGHTS

**Impact of extractive industries generally – Ruggie**

**Allegations of complicity:**

**Shell in Nigeria**

**Unocal in Burma**

**CNPC in Sudan**



# WHY GLOBAL GOVERNANCE

Managing disputes

Coordinating markets

Coordinating  
technology  
development and  
diffusion

Managing externalities

Norms and standards



# WHO ARE THE GOVERNORS?

**Governments – all levels**

**Firms (private and state-owned)**

**IEA, Energy Charter Treaty, IEF, IAEA**

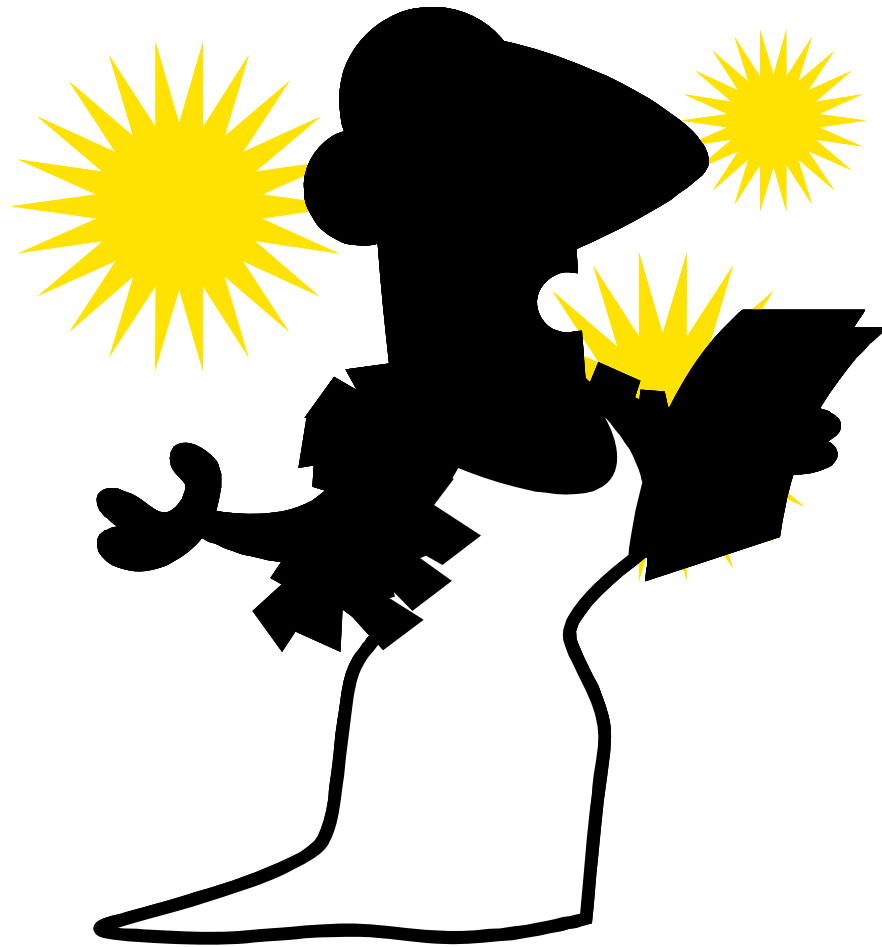
**G8, G20**

**EU, APEC, ASEAN**

**World Bank, ADB**

**Partnerships and Initiatives, e.g. UN Sustainable Energy for All (SEFA)**

**Advocacy organizations**



# UNDERSTANDING GLOBAL ENERGY GOVERNANCE FIVE BROAD THEMES

**Unprioritized objectives**

**Overlapping and partial institutional frameworks**

**Fragmented and weak governing bodies**

**Much of GEG happens within the nation state**

**New forms of governance beyond the state**



# 1. FRAGMENTED AND UNPRIORITIZED OBJECTIVES

## **Trade-offs**

- E.g. Energy poverty versus climate change

## **Can structural trade-offs be resolved and how?**

- Technological change
- Institutional change

## **Weak mechanisms for resolving structural trade-offs**

- G8/G20?
- UNFCCC (Climate negotiations)?

## 2. OVERLAPPING AND PARTIAL INSTITUTIONAL FRAMEWORKS

- **Regime for nuclear (IAEA, NPT)**
- **Regime complexes for, e.g.:**
  - oil markets (IEA, OPEC, IEF, JODI, ECAs, private),
  - clean energy finance (GEF, WB funds, potential UNFCCC fund, venture capital)
- **Regimes and regime complexes not mapped to GEG objectives but to fuel sectors**

# 3. FRAGMENTED AND WEAK INTERNATIONAL GOVERNING BODIES FOR ENERGY

**IEA: closely tied to G8, but partial scope**

**OPEC: relatively ineffective even within narrow domain**

**UN: UN Energy and CSD process**

**Renewable energy (IRENA/REN21/REEEP etc.)**

**Organizational objectives, structures and influence reflect path dependence**

## 4. MUCH OF GEG OCCURS *INSIDE* THE NATION STATE

- **Domestic national policies and politics**
- **Channels from global to national – weakening? (e.g., MDBs)**
- **Re-assertion of state capitalism reinforced by rise of Asia – shift away from market reliance?**

# 5. NEW FORMS OF GOVERNANCE

## **Networks of Cities**

## **Private transnational authorities**

- Berne Union for Export Credit Agencies

## **Disclosure mechanisms**

- Carbon Disclosure project, Extractive Industries Transparency Initiative

## **Self regulation and codes of conduct**

- Equator Principles

**Questions: Authority? Legitimacy? Scale?**



# KNOWLEDGE, RISK, UNCERTAINTY

**Familiar uncertainties, unknown unknowns, and governing complexity**