

Financing sustainable development

- Role of Banks
- Key financing prerequisites
- Major project parties
- “Hybrid” Models
- Demand side management
- Conclusions



Role of Banks

Banks may provide major part of financing

- Long term project financing
- Bridge financing for subsidies
- Repayment by the cash flows of a single project
- Limited or no guarantees by the sponsor
- Key prerequisite is to be repaid on time :
 - Viability of projects
 - Credibility of product offtaker
 - Assumption of key project risks



Key prerequisites

Long term viability of projects

- Maturity of technology : Small hydros, wind, solar
- Subsidy system
 - Necessary especially when technology not yet mature
 - Favorable tariffs
 - Priority of dispatch

Credibility of off-taker :

- Electricity produced : HTSO / PPC
- By-products : other counterparties

Assumption of key project risks by suited counterparts

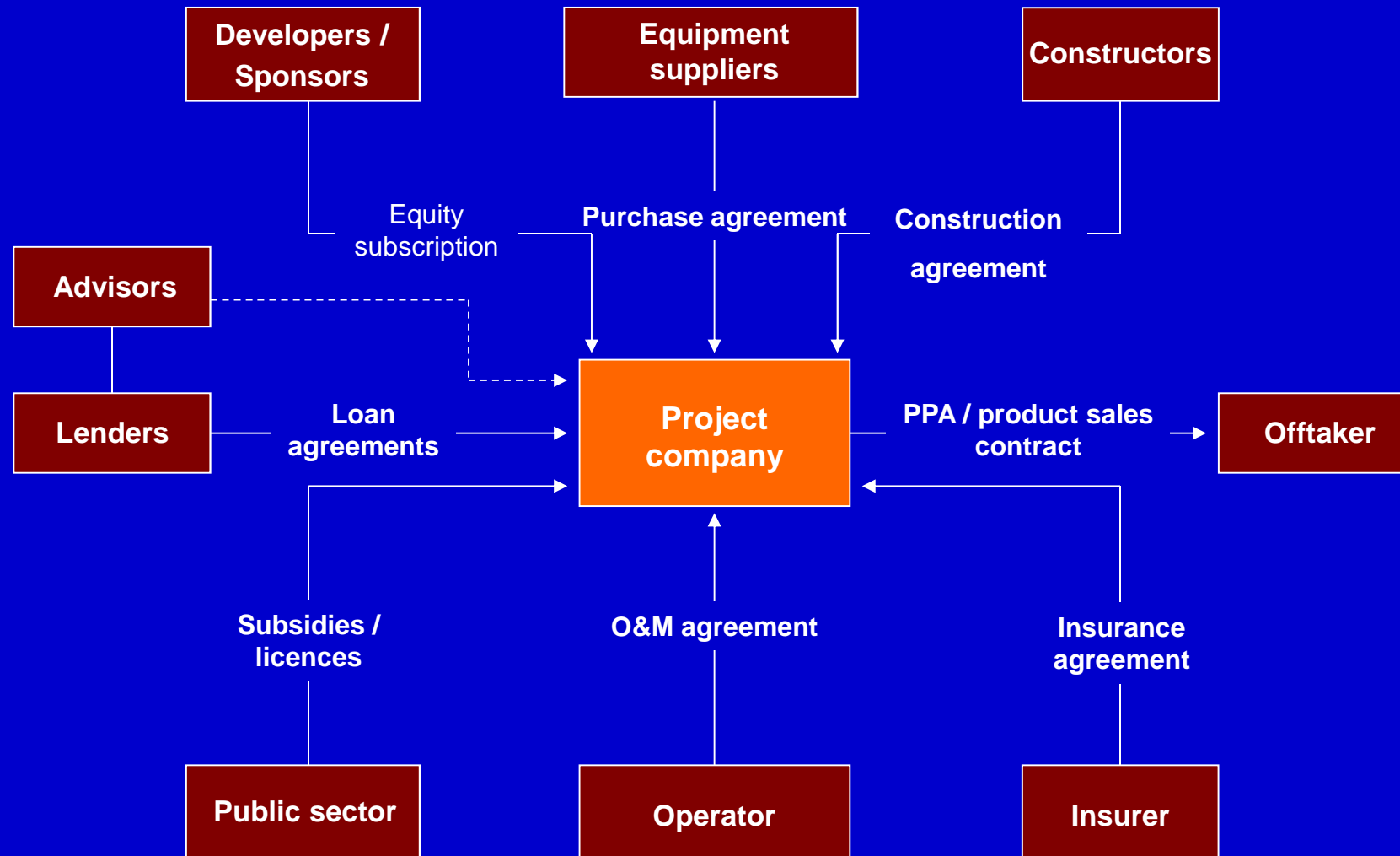


Key risks

Risk	Analysis	Mitigant
"Fuel" supply	<ul style="list-style-type: none"> • Fuel availability • Optimal capture rates 	<ul style="list-style-type: none"> • in situ analysis by experts • Sensitivity analysis
Product offtake	<ul style="list-style-type: none"> • sales of energy / by-products • evolution of tariffs / prices 	<ul style="list-style-type: none"> • PPA / priority of dispatch • regulatory regime
Construction	<ul style="list-style-type: none"> • appropriate / timely & within budget 	<ul style="list-style-type: none"> • experienced constructors/developers • contractual structures • Insurance
Technology	<ul style="list-style-type: none"> • technology failure 	<ul style="list-style-type: none"> • tested technology • reliable producer
Operation	<ul style="list-style-type: none"> • appropriate maintenance to minimise down time 	<ul style="list-style-type: none"> • experienced operators • long-term agreements • Insurance



Major parties



A possible case for “Hybrid” technologies

Meeting water needs of arid areas e.g. islands

- Promotion of sustainable development

RES powered desalination plants

- Power used as priority for desalination process to meet peak demand
- Desalinated water sold to municipally-controlled water grids
- Excess electricity during off-peak times sold to PPC

Key issues for Lenders

- Project viability
- Tariff structure for water sales
- Creditworthiness of municipal counterparties
 - Collateralisation of municipal receivables from central government?



Demand side management

Sustainability through rationalization of demand

- Tariff structures
- Energy saving initiatives
 - Energy Saving Companies (ESCOs)
- Mentality change



Conclusions

- Viability & financeability of a large number of environment – friendly technologies
- Key issue for lenders : how we get our money back
- Hybrid technologies might meet certain energy intensive needs
- Future equilibrium will depend i.a.:
 - Which technology will prove more economical
 - Broader environmental concerns



LSE-Hellenic Observatory Conference
The European Sustainable Development Strategy and Greece

Opening Remarks
Bank of Greece, 4 June 2007

1. It is a great pleasure to host this conference organized by the Hellenic Observatory and the Hellenic LSE Alumni Association. Can I take this opportunity to welcome you all to the Bank of Greece. I trust that you will find the papers and discussions interesting and fruitful.
2. This is now the second year in a row that we have acted as hosts to such a conference. The topic of last year's conference was the Balkan enlargement of the EU and its implications for Greece. This year the focus is on the European Sustainable Development Strategy, which provides the environmental dimension to the Lisbon Strategy. The latter seeks to make the European Union "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion." However, policies to achieve social cohesion and economic growth cannot come at the cost of destroying the environment in which we live.
3. One aspect of sustainable development that is receiving the most attention recently is that of the relationship between development and climate change. Increased rates of growth across the developing and developed world imply greater use of energy and an increase in the greenhouse gasses emitted. At the same time, development strategies have caused deforestation across large parts of the tropics and this reduces the amount of carbon dioxide that can be absorbed.
4. A recent influential report on the effects of climate change by Sir Nick Stern for the British government suggests that the cost of reducing

emissions by 25% and maintaining them at that level are not really that great – around 1% of world GDP. A reduction in emissions of that magnitude would have an important impact on the course of climate change, yet would not have a large effect on the prospects for development. By contrast, doing nothing could have catastrophic consequences in terms of rising average temperatures the world over. So why does so little seem to be done?

5. Environmental issues are often notoriously difficult to address because of what economists call externalities. That is, the total costs of certain activities (both private and social) are not borne by those who reap the benefits (which remain private). Where this occurs intervention by the state can be used to ensure that decisions are made on the basis of a social cost-benefit analysis and not just a private one. But there is an added dimension to many environmental issues, namely, that they require cooperation across national borders. In this respect, the EU is uniquely placed since the mechanisms already exist which allow such cross-country cooperation. A European strategy could result in significant gains in terms of “meeting the needs of the present without compromising the ability of future generations to meet their own needs”, to quote from the World Commission on Environment and Development which reported on these issues some 20 years ago.
6. The forthcoming G8 summit in Germany this week provides the major industrial countries with an opportunity to commit themselves to realistic, yet tough, targets for reducing global emissions. Fortunately, news reports during the past few days indicate that U.S. President George W. Bush, who has been reluctant to sign up to an international agreement, has changed positions and now supports cuts in emissions of greenhouse gases linked to global warming. Specifically, President Bush reportedly proposed a plan to gather the world’s most-polluting

countries and within 18 months set individual steps for slowing emissions and a long-term goal for reducing them. I believe that this proposal would help produce a shift away from energy pollution. I also believe that a prerequisite for getting newly emerging economies, such as China and India, to take action is that the industrial countries take a strong lead.

7. Our speakers today are well-placed to comment on progress with the EU Strategy, including as they do people from academia, the European Commission, The Greek Ministry of Development, industry, environment groups and think tanks. I am sure that this will give a well-rounded feel to today's discussion and I am looking forward to hear what they all have to say.
8. Can I now pass the floor over to Dimitris Paraskevas, the President of the Hellenic LSE Alumni Association.

The renewed EU Sustainable Development Strategy

Timo Makela

European Commission – DG Environment

Athens, 4 June 2007



Defining Sustainable Development

Brundtland: *Development that meets the needs of current generations without compromising the ability of future generations to meet their needs*



EU's approach to SD

- **March 2000:** Lisbon strategy adopted
- **Jun 2001:** Adoption of Sustainable Development Strategy
- **Feb 2002:** A global dimension is added to the strategy
- **June 2006:** Review of the Sustainable Development Strategy



Actions taken since 2001

Priority Areas, ex:

- Climate change: emission trading, climate & energy package...
- Health: REACH proposal on chemicals...
- Resources: reform of the CAP and CFP, Natura 2000 (18% territory)
- Transport: Bio fuels Directive, Marco Polo programme (modal shift)

Better Policy Making, ex:

- Systematic Impact Assessment of all major initiatives
- 7 Thematic Strategies: integrated and participatory approach
- Minimum standards for public consultation

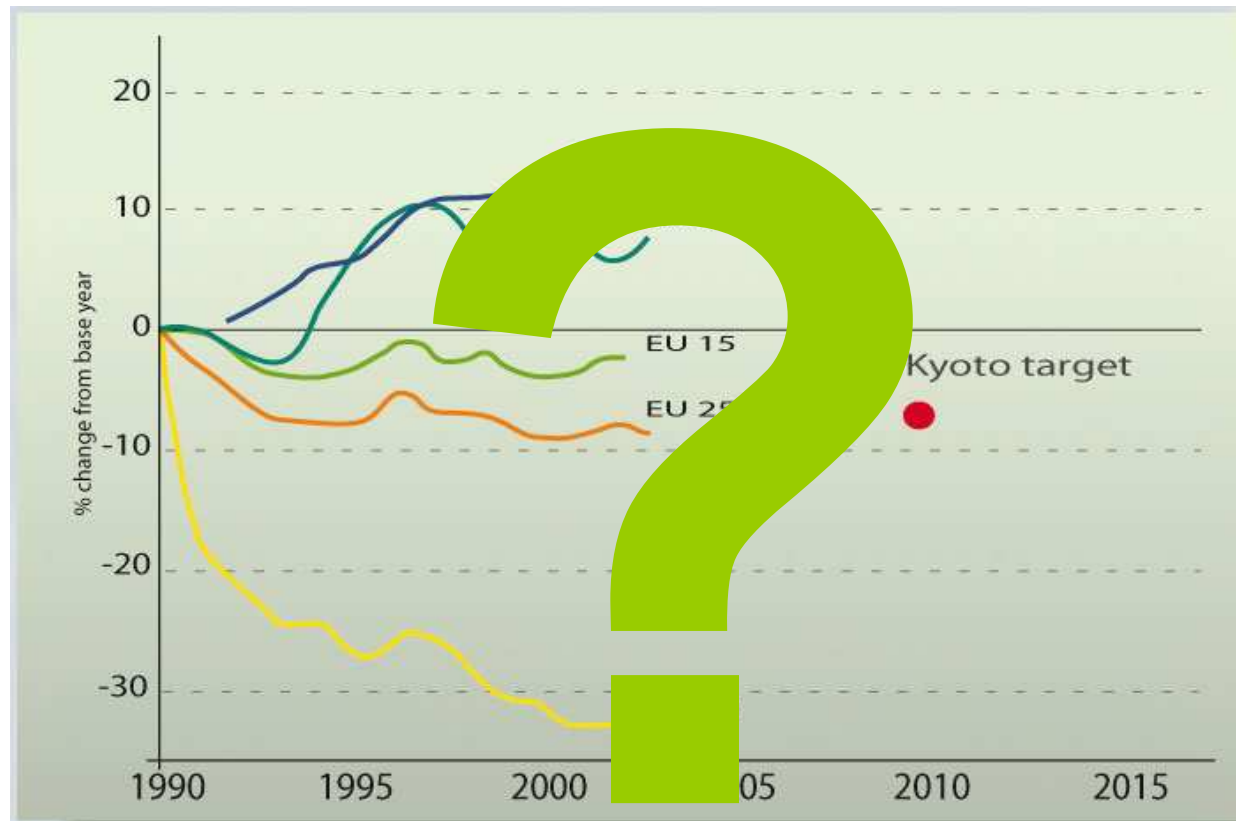


Progress

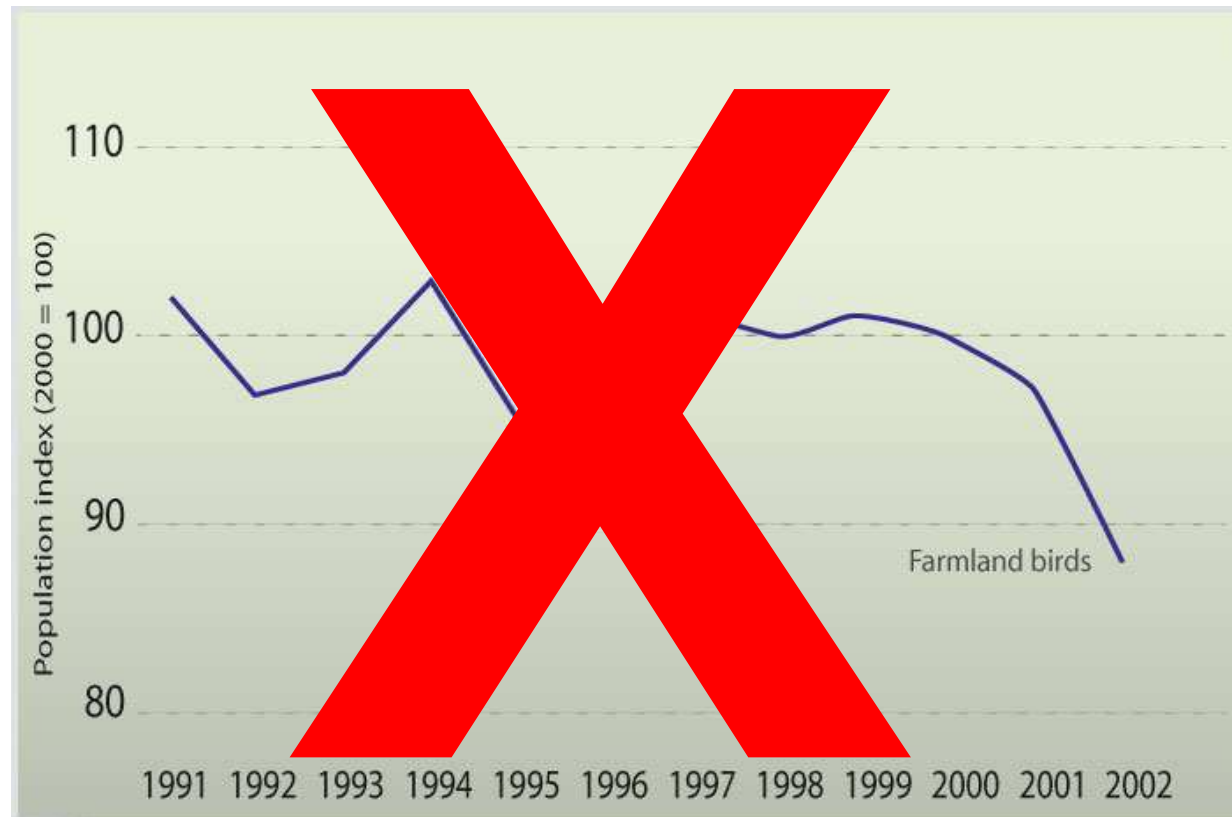
How successful have we been in curbing unsustainable trends?



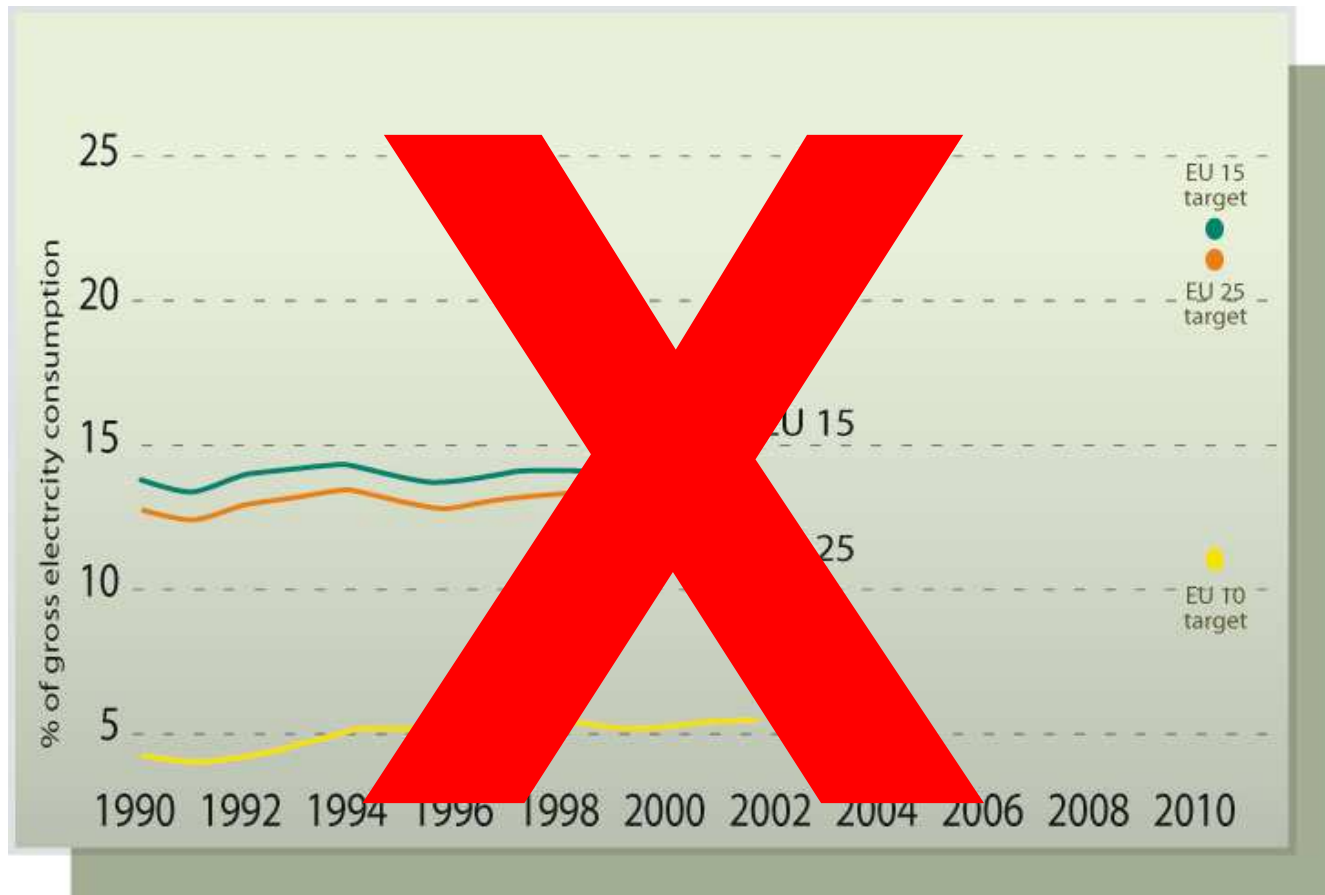
Greenhouse gas emissions



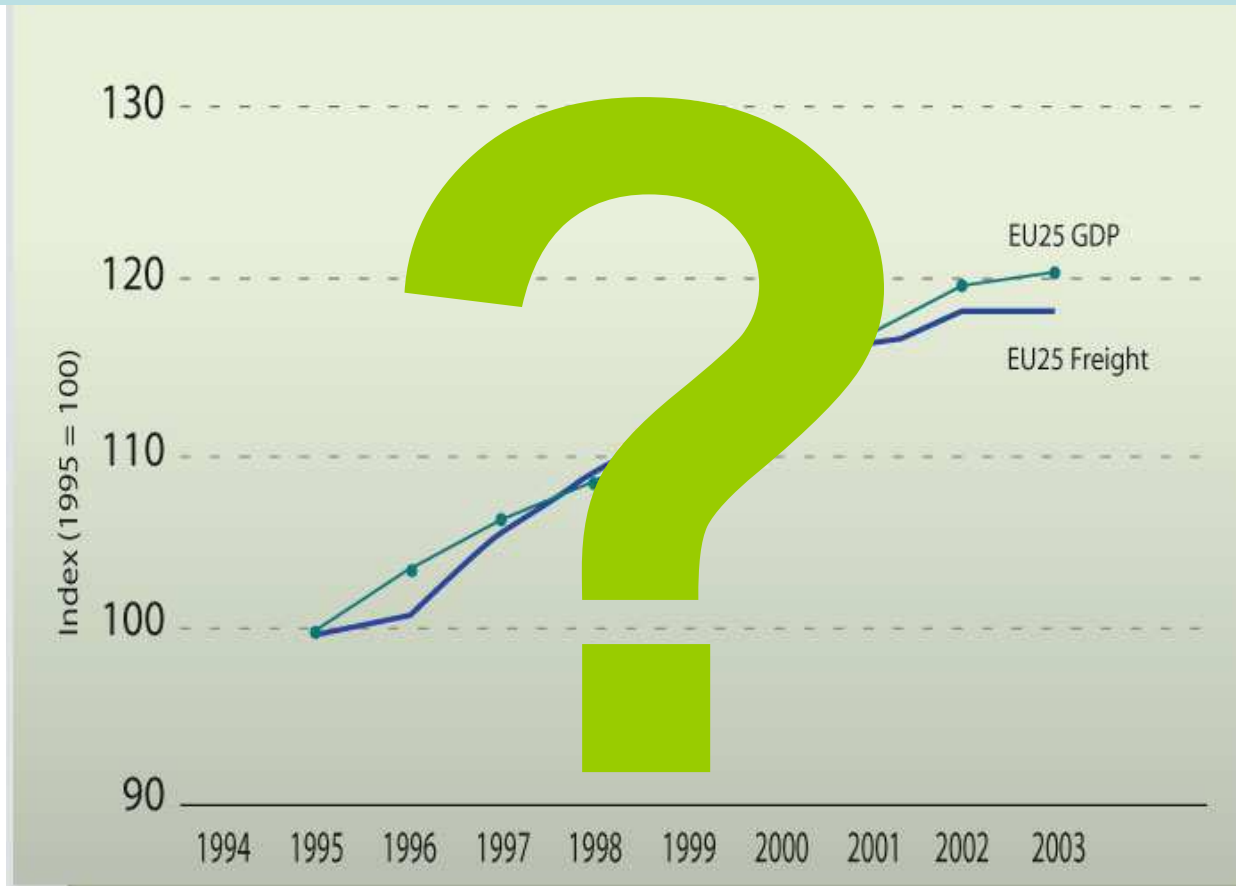
Biodiversity - Birds



Electricity from renewables



Transport



Energy intensity



Current state of affairs

- Unsustainable trends are still there
- Instruments for policy coherence need improvement

European Council called for the adoption of a more ambitious strategy

=> Adopted in 2006



EU SDS: overview

- **Priority areas for action (2006)**
 - **Climate change and clean energy**
 - **Sustainable transport**
 - **Sustainable Production and Consumption**
 - **Public health**
 - **Conservation and management of natural resources**
 - **Social inclusion, demography and migration**
 - **Global poverty and sustainable development challenges**



EU SDS: overview

- **Cross cutting policies**
 - **Education**
 - **R&D**
 - **Fiscal instruments**
- **Governance cycle**
 - **2 year progress reports**
 - **Discussion at December Council**
 - **System of peer reviews of NSDS**



Concluding remarks



Overcoming barriers to more SD

- **But SD remains problematic**
 - Ambiguity of the concept
 - Strong resistance of losers to change
 - Cost considerations
- **Parts of the solution...**
 - Promote social and economic progress while keeping the environment as limiting factor
 - Look for other measurements of progress than GDP
 - Involve people & share experiences



Thank you

Timo.Makela@ec.europa.eu



3^η Ετήσια Ημερίδα του Ελληνικού Παρατηρητηρίου του LSE

To London School of Economics (LSE) και ο Σύλλογος Αποφοίτων του LSE διοργανώνουν ημερίδα με θέμα:

"The European Sustainable Development Strategy and Greece"

Πραγματοποιήθηκε χθες στην Τράπεζα της Ελλάδος η τρίτη ετήσια ημερίδα του Ελληνικού Παρατηρητηρίου του London School of Economics σε συνεργασία με τον Ελληνικό Σύλλογο Αποφοίτων του LSE, με θέμα την **‘Ευρωπαϊκή Στρατηγική για την Αειφόρο Ανάπτυξη και το ρόλο του Ενεργειακού Τομέα στην Ελλάδα’** με κεντρικούς ομιλητές τον Διευθυντή Αειφόρου Ανάπτυξης της Γενικής Διεύθυνσης Περιβάλλοντος της Ευρωπαϊκής Επιτροπής κ. **Timo Makela**, τον καθηγητή Ευρωπαϊκών Σπουδών του LSE κ. **Iain Begg** και τον Υφυπουργό Εξωτερικών κ. **Γ. Βαληνάκη**. Τις εργασίες της ημερίδας άνοιξαν με σύντομες τοποθετήσεις τους ο Διοικητής της ΤτΕ κ. **Ν. Γκαργκάνας**, ο Πρόεδρος του Ελληνικού Συλλόγου Αποφοίτων του LSE κ. **Δ. Παρασκευάς** και ο Διευθυντής του Ελληνικού Παρατηρητηρίου καθηγητής κ. **K. Featherstone**.

Ο κ. **Makela** ανέπτυξε στην ομιλία του το θεσμικό πλαίσιο της ΕΕ για την Αειφόρο Ανάπτυξη και επεσήμανε ότι η αντιμετώπιση των περιβαλλοντικών-ενεργειακών προκλήσεων περνάει μέσα από την οροθέτηση και εφαρμογή ενός **συνδυασμού ρυθμιστικών και τιμολογιακών μέτρων** που θα αποθαρρύνουν την κατασπατάληση και θα στρέφουν την οικονομία προς ηπιότερες μορφές και αποδοτικότερες χρήσεις ενέργειας. Ο **καθηγ. κ. Begg** αναφέρθηκε σε κάποια από τα προβλήματα του υπάρχοντος θεσμικού πλαισίου και υπογράμμισε την **ανάγκη ανάπτυξης νέων ‘έξυπνων’ τεχνολογιών** για την αύξηση της ενεργειακής αποτελεσματικότητας αλλά και της γενικότερης τεχνολογικής ανάπτυξης της Ευρώπης, σε συνάρτηση και με τους ευρύτερους αναπτυξιακούς στόχους της Στρατηγικής της Λισσαβόνας. Τέλος, ο **υφυπουργός κ. Γ. Βαληνάκης** αναφέρθηκε στις ενέργειες της Ελλάδας για την ενίσχυση της παραγωγής ‘καθαρής’ ενέργειας, την ορθολογικοποίηση του ενεργειακού συστήματος **σε σχέση και με τον γενικότερο σχεδιασμό ενεργειακής πολιτικής στα Βαλκάνια**, και την υιοθέτηση των αρχών της Ευρωπαϊκής Στρατηγικής στο Ελληνικό ρυθμιστικό πλαίσιο.

Το δεύτερο μέρος της ημερίδας εστίασε στον Ελληνικό ενεργειακό τομέα με τοποθετήσεις από ειδικούς εμπειρογνώμονες όπως ο κ. **Μ. Καραμανής**, Πρόεδρος της ΡΑΕ ο καθηγητής κ. **Ευ. Μαγείρου**, Μέλος του ΔΣ της ΔΕΗ, ο κ. **Π. Καβουλάκος**, Διευθύνων Σύμβουλος των ΕΛΠΕ, ο κ. **Γ. Εμίρης**, υπεύθυνος του τομέα επενδύσεων της Alpha Bank, ο κ. **Ν. Χαραλαμπίδης**, Πρόεδρος της Ελληνικής Greenpeace, και ο καθηγητής κ. **Κ. Καρτάλης**, Πρόεδρος του ΙΣΤΑΜΕ. Οι τοποθετήσεις των εμπειρογνομόνων συνέκλιναν κυρίως στη σημασία της κατάλληλης **τιμολογιακής πολιτικής κινήτρων-αντικινήτρων** που θα κατευθύνουν την οικονομία προς την ανάπτυξη και χρήση αποδοτικότερων μορφών ενέργειας. Εξίσου όμως υπογράμμισαν ότι το **ρυθμιστικό πλαίσιο** θα πρέπει να επεκτείνεται σε τομείς πέρα από τον ενεργειακό (π.χ.: κατασκευή λιγότερο ενεργοβόρων κτηρίων), ώστε ταυτόχρονα να δημιουργούνται και οι **προϋποθέσεις για πιο ορθολογική χρήση ενέργειας**. Η ημερίδα ανέδειξε και κάποιες εγγενείς αδυναμίες της Ελλάδας, όπως την συνέχιση της **εξάρτησης της ΔΕΗ από τον λιγνίτη** και την **αδυναμία ουσιαστικής εκμετάλλευσης των ανανεώσιμων πηγών ενέργειας** που βρίσκονται σε μεγάλη επάρκεια στην Ελλάδα (π.χ.: αιολική, ηλιακή) εξαιτίας της **έλλειψης κατάλληλων υποδομών και τεχνολογιών** – που οδηγεί σε μεγαλύτερη **ενεργειακή εξάρτηση** της χώρας από τις αναδυόμενες ενεργειακές αγορές της Ρωσίας και της Κεντρικής Ασίας.

Την ημερίδα, που είχε την ευγενική χορηγία των **Fortis Bank, Lexus-Toyota, Δημόσια Επιχείρηση Φυσικού Αερίου, Alpha Bank και Καθημερινή**, παρακολούθησαν σε μια ασφυκτικά γεμάτη αίθουσα απόφοιτου του LSE και σημαντικές προσωπικότητες του πολιτικού και επιχειρηματικού κόσμου, μεταξύ των οποίων ο πρώην Επίτροπος της ΕΕ κ. Γ. Παλαιοκρασσάς, ο πρώην πρόεδρος του ΣΕΒ κ. Θ. Παπαλεξόπουλος, Βρετανός Πρέσβης κ. Simon Gass, κ. Ian Whitting Director Economic and EU Affairs, Καπετάνιο Παναγιώτη Τσάκο, κα Christina Crosby Executive Director Goldman Sachs, κ. Α. Γαβριηλιδης Αντιπρόεδρος Επιτροπή Κεφαλαιαγοράς, κ. Ι. Αγαπητίδη Κέντρο ανανεώσιμων πηγών ενέργειας κ.ά.

Programme

The European Sustainable Development Strategy and Greece

5:20 *Introduction / welcome*

Dr Nikolaos Garganas Governor, Bank of Greece
Dimitris Paraskevas President, Hellenic LSE Alumni Association
Prof Kevin Featherstone, Director, Hellenic Observatory, LSE

5:45 *The European policy framework for sustainable development*

(Chair, Dr Vassilis Monastiriotis)

The European Sustainable Development Strategy

Mr Stavros Dimas (EU Commissioner, DG Environment)**

The ESDS and the need for a ‘smart’ Lisbon Strategy

Prof Iain Begg (European Institute, LSE)

Questions & Answers from the floor

6:45 *Refreshments*

7:00 *Sustainable development in Greece*

(Chair, Prof Kevin Featherstone)

Policy environment for sustainable development in Greece

Dr Yiannis Valinakis (Deputy Minister, Ministry of Foreign Affairs)

The Greek energy sector and its role for sustainable development

Panel discussion with:

Mr Michael Caramanis (Chairman, Regulation Authority for Energy)

Prof Evaggelos Mageirou (Board, Greek Public Power Corporation)

Mr Panos Cavoulacos (CEO, Hellenic Petroleum)

Mr Yiannis Emiris (Manager, Investment Banking, Alpha Bank)

Dr Nikos Charalambides (Executive Director, Greenpeace Greece)

Prof Costas Kartalis (President, ISTANCE)

Questions & Answers from the floor

8:30 *Reception*

***: Due to illness, the Commissioner was represented by the DG's Director for Sustainable Development Mr Timo Makela*

Note: Simultaneous translation will be provided

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