

Δρ. Νίκος Βασιλάκος

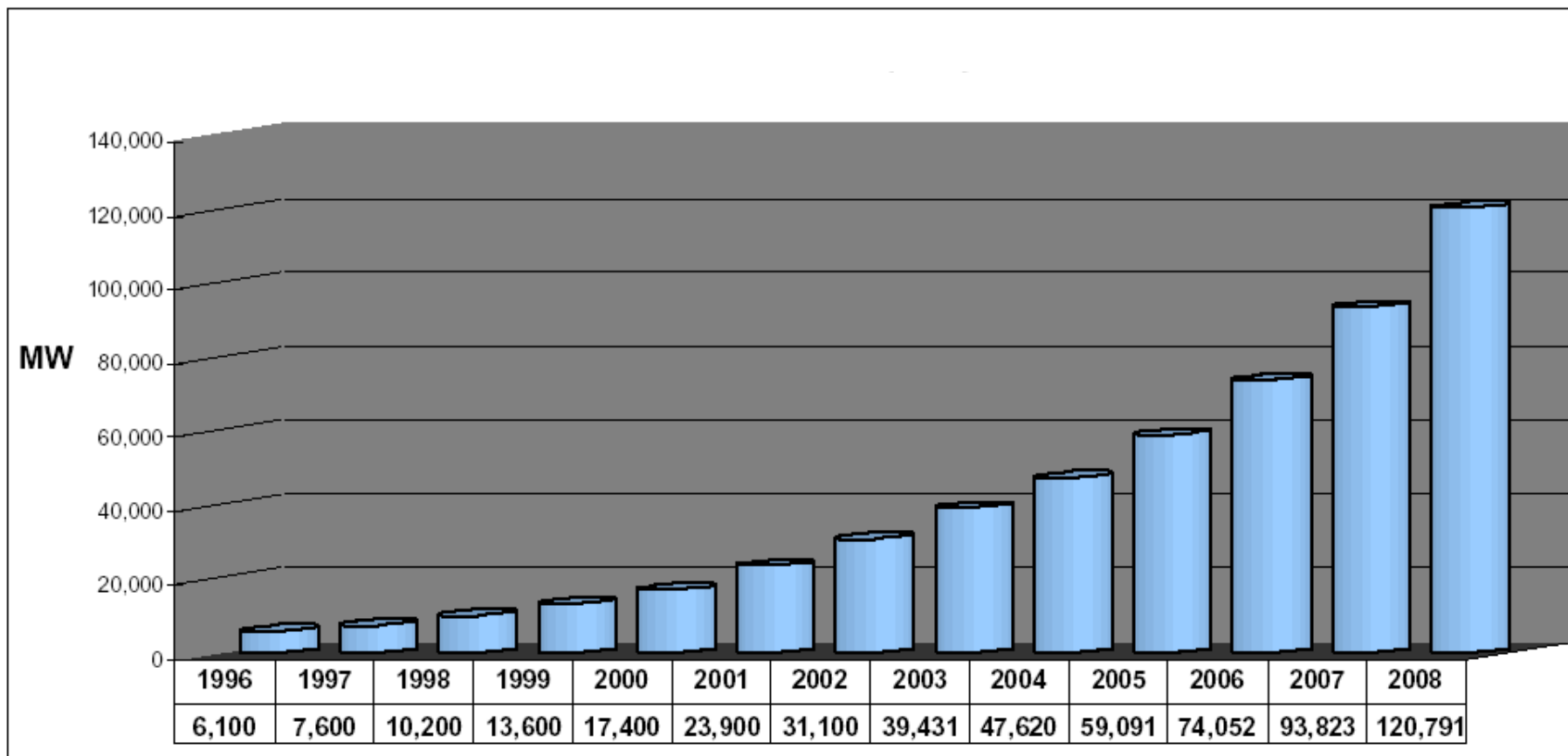
*Πρόεδρος της Ευρωπαϊκής Ομοσπονδίας Παραγωγών Ενέργειας από ΑΠΕ
(EREF)*

**ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ &
ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ
ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ**

ΑΘΗΝΑ, ΙΟΥΛΙΟΣ 2009

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ: Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

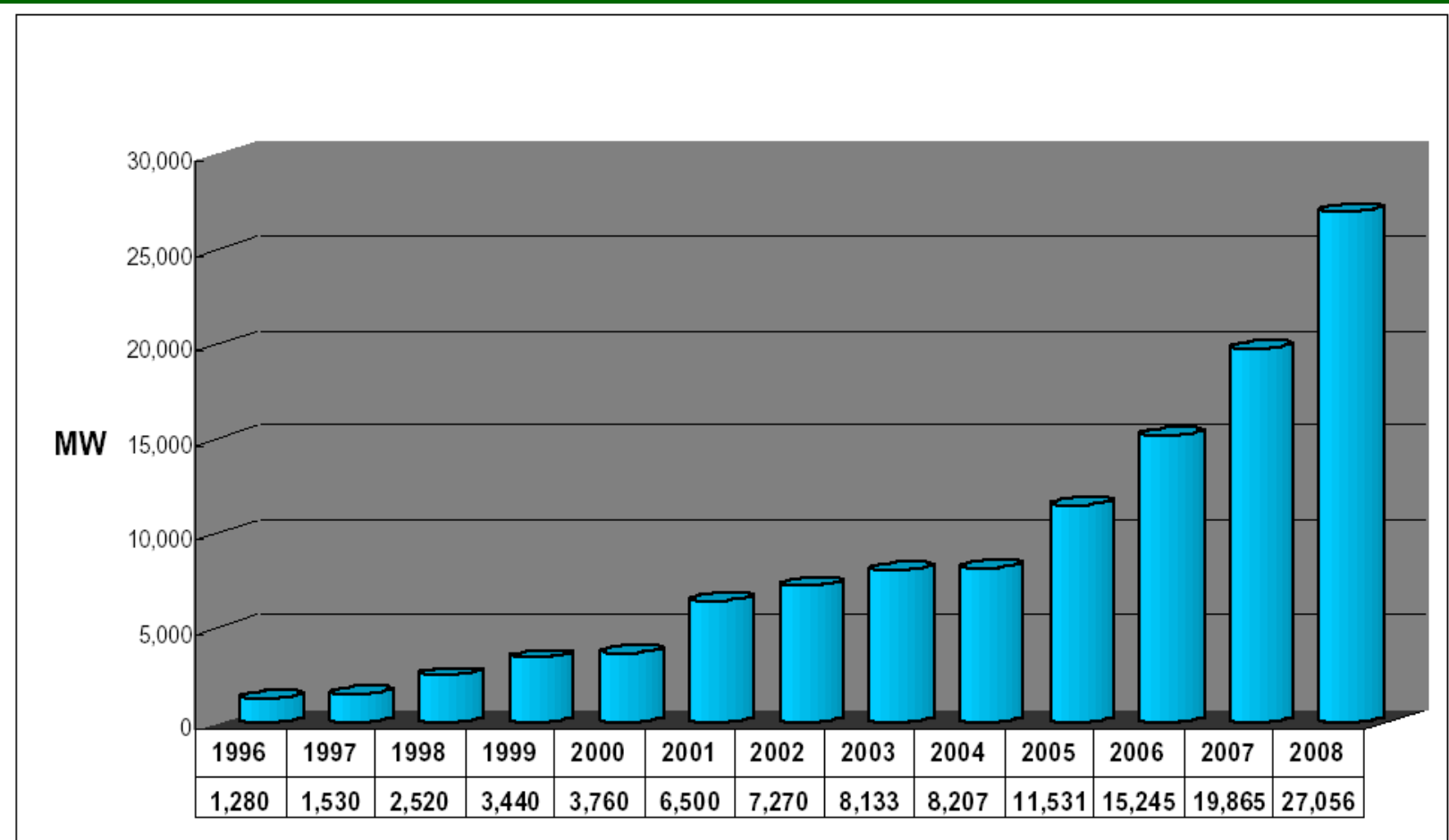
GLOBAL CUMULATIVE INSTALLED WIND CAPACITY 1996 - 2008



Source : GWEC

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

GLOBAL ANNUAL INSTALLED WIND CAPACITY 1996 - 2008



Source : GWEC

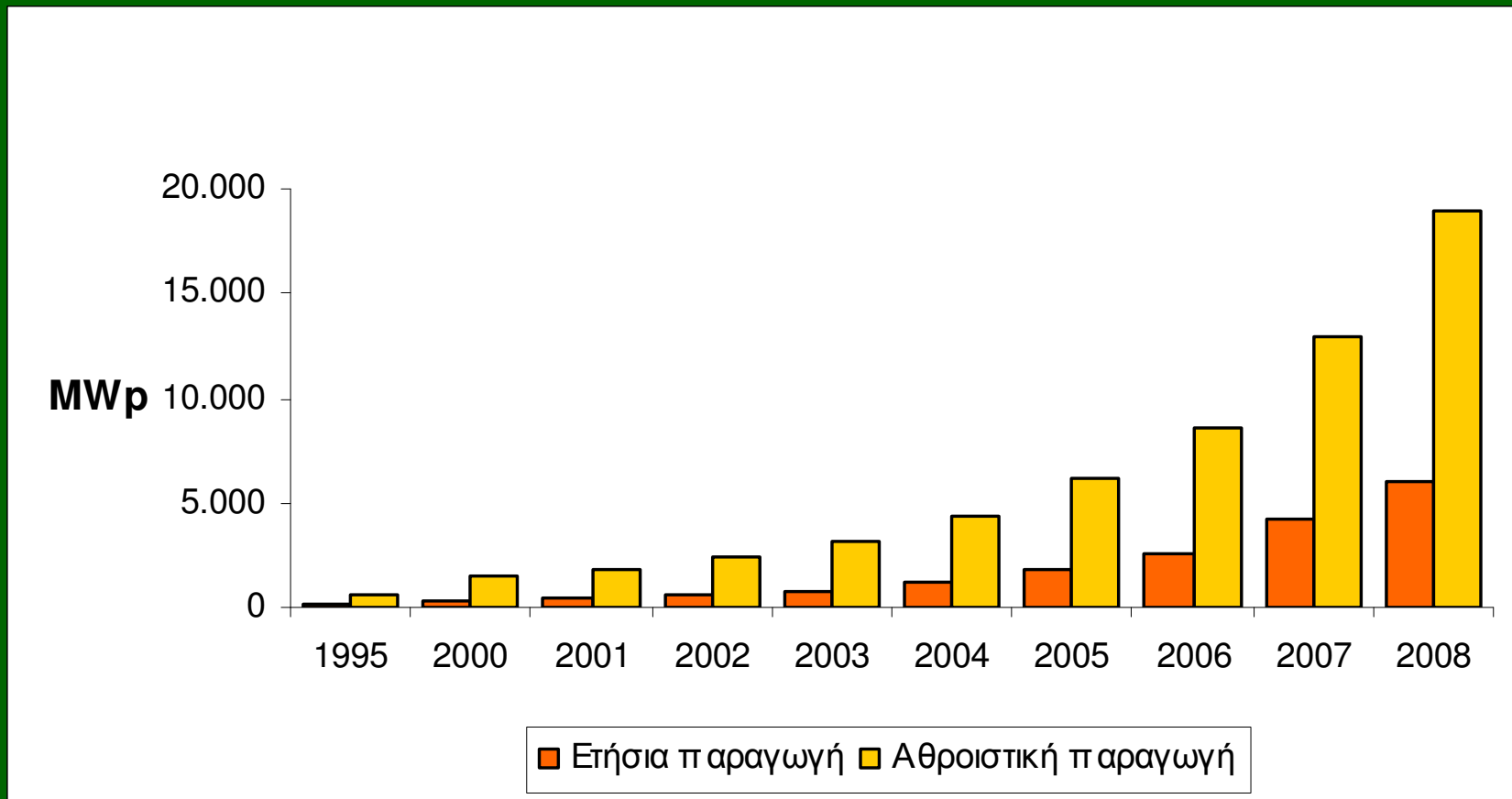
ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

ΙΣΧΥΣ ΑΙΟΛΙΚΩΝ ΠΑΡΚΩΝ ΣΕ ΛΕΙΤΟΥΡΓΙΑ ΣΕ ΧΩΡΕΣ ΤΗΣ ΕΕ (MW-ΤΕΛΟΣ 2008)

ΧΩΡΑ	ΙΣΧΥΣ ΠΟΥ ΕΓΚΑΤΑΣΤΑΘΗΚΕ ΜΕΣΑ ΣΤΟ 2008	ΣΥΝΟΛΙΚΑ ΕΓΚΑΤΕΣΤΗΜΕΝΗ ΙΣΧΥΣ (ΤΕΛΟΣ 2008)
Γερμανία	1.665	23.903
Ισπανία	1.609	16.754
Ιταλία	1.010	3.736
Γαλλία	950	3.404
Μ. Βρετανία	836	3.241
Δανία	77	3.180
Πορτογαλία	712	2.862
Ολλανδία	500	2.225
Σουηδία	236	1.021
Ιρλανδία	208	1.002
Αυστρία	14	995
Ελλάδα	114	985
ΕΕ-27	8.484	64.949 (+15% το 2008)

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ: Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

Παγκόσμια παραγωγή Φωτοβολταϊκών (1995-2008)



Πηγή : Στοιχεία Στ. Ψωμά (ΣΕΦ), 2009

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

- Πράσινη επιχειρηματικότητα (ΑΠΕ & εξοικονόμηση ενέργειας) : Η υπ' αριθμόν 1 επενδυτική προτεραιότητα παγκοσμίως για την έξοδο από την οικονομική κρίση
- MW προς MW, οι ΑΠΕ προσφέρουν πολύ περισσότερες θέσεις απασχόλησης από ότι οι συμβατικές πηγές ενέργειας (π.χ. αιολική ενέργεια ~1 νέα θέση εργασίας [πλήρους απασχόλησης, full-time equivalent employment] ανά MW, σταθμός φυσικού αερίου συνδυασμένου κύκλου ~0,15 νέες θέσεις/MW)
- Πρόσφατες εντυπωσιακές διακηρύξεις Γ.Γ. ΟΗΕ κλπ., Ι.Ε.Α. ("New Deal")

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

«**Το επείγον** της αντιμετώπισης της οικονομικής κρίσης δεν αποτελεί δικαιολογία για να ξεχάσουμε την οικολογική κρίση. Αντιθέτως, είναι μια ευκαιρία να πετύχουμε με ένα συμπάρο δυο τρυγόνια. Στο μέλλον θα διαθέτουμε κατά πάσα πιθανότητα λιγότερους πόρους για την αντιμετώπιση των παγκόσμιων προβλημάτων. Πώς μπορούμε να δημιουργήσουμε νέες θέσεις εργασίας και να τονώσουμε την ανάπτυξη ; Πώς μπορούμε να εξασφαλίσουμε ενεργειακές προμήθειες σε προσιτές τιμές ;

Η απάντηση είναι η πράσινη οικονομία. Αν ο τρόπος ζωής μας βρίσκεται υπό απειλή, η απάντησή μας πρέπει να είναι η προσαρμογή. Οι επιστήμονες συμφωνούν : για την αντιμετώπιση των κλιματικών αλλαγών, χρειαζόμαστε μια ενεργειακή επανάσταση, μια καθολική αλλαγή στον τρόπο με τον οποίο τροφοδοτούμε με ενέργεια τις κοινωνίες μας. Οι οικονομολόγοι συμφωνούν επίσης : αυτή τη στιγμή η περισσότερο αναπτυσσόμενη βιομηχανία στον κόσμο είναι οι ανανεώσιμες πηγές ενέργειας. Εκεί δημιουργούνται τα επαγγέλματα του μέλλοντος, εκεί λαμβάνουν χώρα πολλές από τις τεχνολογικές καινοτομίες, εισάγοντάς μας στη νέα εποχή του οικονομικού μετασχηματισμού».

- *Ban Ki-Moon, Γενικός Γραμματέας ΟΗΕ*
- *Susilo Bambang Yudhoyono, Πρόεδρος Ινδονησίας*
- *Donald Tusk, Πρωθυπουργός Πολωνίας*
- *Anders Fogh Rasmussen, Πρωθυπουργός Δανίας*

(Κοινό άρθρο στην εφημερίδα INTERNATIONAL HERALD TRIBUNE, Τρίτη 13 Νοεμβρίου 2008)



International Energy Agency
Agence Internationale de l'Energie

Energy Security, Growth and Sustainability
through Co-operation and Outreach

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IEA calls for "Clean Energy New Deal" to stimulate global economy and combat climate change

"The global economic slowdown must be viewed as an opportunity, not a distraction from efforts to mitigate climate change. Countries planning fiscal stimulus packages should invest in energy efficiency and clean technologies to build sustainable energy infrastructure. This sort of 'Clean Energy New Deal' not only generates economic growth and makes sense from an environmental standpoint, but also enhances energy security. All countries could benefit".

"The current volatility in global energy markets and the broader economic slowdown must not push us off-track from our efforts to address climate change. We must put in place the framework that will guide investment during the recovery and we must start the green infrastructure that will enable the sustainable economy going forward. We think there is an enormous opportunity to develop a 'Clean Energy New Deal' to achieve energy security, economic and environmental goals. By adopting new energy efficiency measures, constructing green energy infrastructure and taking steps to integrate cleaner energy into the power grids, governments can lock in sustainable technologies and reduce CO₂ emissions by almost 40% relative to the projected baseline emissions for 2030."

Nobuo Tanaka, Executive Director of the International Energy Agency (IEA)
UN Climate Talks (COP14), Poznan, Poland, 8 December 2008

Official Journal

of the European Union



English edition

Legislation

Contents

1 Acts adopted under the EC Treaty/Euratom Treaty whose publication is obligatory

REGULATIONS

- * Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles (1)

[1](#)

DIRECTIVES

- * Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (1)
- * Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community (1)
- * Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (1)
- * Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (1)

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DECISIONS ADOPTED JOINTLY BY THE EUROPEAN PARLIAMENT AND THE COUNCIL

- * Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020

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(1) Text with EEA relevance

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DIRECTIVES

DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 April 2009
on the promotion of the use of energy from renewable sources and amending and subsequently
repealing Directives 2001/77/EC and 2003/30/EC
 (Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof, and Article 95 thereof in relation to Articles 17, 18 and 19 of this Directive,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Having regard to the opinion of the Committee of the Regions ⁽²⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽³⁾,

Whereas:

- (1) The control of European energy consumption and the increased use of energy from renewable sources, together with energy savings and increased energy efficiency, constitute important parts of the package of measures needed to reduce greenhouse gas emissions and comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and with further Community and international greenhouse gas emission reduction commitments beyond 2012. Those factors also have an important part to play in promoting the security of energy supply, promoting technological development and innovation and providing opportunities for employment and regional development, especially in rural and isolated areas.
- (2) In particular, increasing technological improvements, incentives for the use and expansion of public transport, the use of energy efficiency technologies and the use of energy from renewable sources in transport are some of the most effective tools by which the Community can

reduce its dependence on imported oil in the transport sector, in which the security of energy supply problem is most acute, and influence the fuel market for transport.

- (3) The opportunities for establishing economic growth through innovation and a sustainable competitive energy policy have been recognised. Production of energy from renewable sources often depends on local or regional small and medium-sized enterprises (SMEs). The opportunities for growth and employment that investment in regional and local production of energy from renewable sources bring about in the Member States and their regions are important. The Commission and the Member States should therefore support national and regional development measures in those areas, encourage the exchange of best practices in production of energy from renewable sources between local and regional development initiatives and promote the use of structural funding in this area.

- (4) When favouring the development of the market for renewable energy sources, it is necessary to take into account the positive impact on regional and local development opportunities, export prospects, social cohesion and employment opportunities, in particular as concerns SMEs and independent energy producers.

- (5) In order to reduce greenhouse gas emissions within the Community and reduce its dependence on energy imports, the development of energy from renewable sources should be closely linked to increased energy efficiency.

- (6) It is appropriate to support the demonstration and commercialisation phase of decentralised renewable energy technologies. The move towards decentralised energy production has many benefits, including the utilisation of local energy sources, increased local security of energy supply, shorter transport distances and reduced energy transmission losses. Such decentralisation also fosters community development and cohesion by providing income sources and creating jobs locally.

⁽¹⁾ Opinion of 17 September 2008 (OJ C 77, 41, 4.2009, p. 43).

⁽²⁾ OJ C 325, 19.12.2008, p. 12.

⁽³⁾ Opinion of the European Parliament of 17 December 2008 (not yet published in the Official Journal) and Council Decision of 6 April 2009.



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 30.6.2009
C(2009) 5174-1

COMMISSION DECISION

of 30.6.2009

establishing a template for National Renewable Energy Action Plans under Directive
2009/28/EC

(Text with EEA relevance)

EN

EN

INVITATION

The European Platform Against Windfarms (EPAW) has the pleasure of inviting you to its first PRESS CONFERENCE

ON TUESDAY, MAY 26

In Brussels, at the International Press Center (IPC), Room
“Passage” at 14.30 h (2.30 pm)

“Windfarms, the modern plague of Europe”

Address of the day: IPC – Résidence Palace – rue de la Loi
155 – 1040 Brussels

(close to Schumann roundabout)

www.epaw.org

ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ : Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

*The impact of renewable energy policy
on **economic growth** and
employment in the European Union*



Summary of the results of the Employ-RES research project conducted on behalf of the European Commission DG Energy and Transport



Financed by the European Commission, DG Energy and Transport, under tender TREN/D1/474/2006

Table 1: Key inputs and results of the scenarios analysed in the study

Key figures at European level (EU27)		Start of modelling	Business as usual (BAU)				Accelerated deployment policies (ADP)		
		Unit	2006	2010	2020	2030	2010	2020	2030
Energy system characteristics (inputs)									
Gross final energy demand	Mtoe / a	1,240	1,299	1,416	1,477	1,293	1,174	1,154	
Oil price	US\$2005 / barrel	59	76	100	119	76	100	109	
Reference (wholesale) electricity price	€/2005 / Mwh	61.9	66.8	81.9	82.4	66.0	75.1	70.7	
Reference heat price (grid)	€/2005 / Mwh	33.0	38.0	53.6	60.5	38.0	53.6	60.6	
Reference heat price (non-grid)	€/2005 / Mwh	58.0	65.3	85.3	90.7	65.3	85.5	90.9	
Reference transport fuel price	€/2005 / Mwh	40.1	53.0	75.2	83.6	53.0	75.2	83.6	
CO2 price	€/2005 / ton	20.0	20.0	34.2	44.2	20.0	34.2	44.2	
RES deployment, turnover and cost (GREEN-J)									
Total RES deployment	Mtoe / a	112.5	138.8	186.3	245.9	141.5	219.4	347.5	
RES share in gross final energy demand	%	9%	11%	14%	17%	11%	20%	30%	
RES share in gross electricity demand	%	10%	10%	23%	28%	20%	32%	40%	
RES share in gross heat demand	%	10%	12%	14%	17%	12%	22%	30%	
RES share in transport fuel demand	%	1%	2%	6%	6%	2%	8%	12%	
Average specific generation costs for new RES (in relation to 2006)	%	100%	117%	144%	147%	119%	144%	156%	
Additional generation costs for RES	€/MWh 2005 / a	5.0	4.7	3.8	5.0	4.8	9.4	18.4	
Avoided CO2 emissions due to RES	million t / a	674	710	935	1,120	723	1,334	1,792	
Yearly capital expenditures for new RES	€/MWh 2005 / a	25.5	27.2	40.7	47.4	38.8	63.2	86.4	
O&M expenditures for RES	€/MWh 2005 / a	11.5	14.5	20.3	25.8	14.8	23.3	39.6	
Expenditures for biomass fuels	€/MWh 2005 / a	16.0	24.0	47.8	60.7	24.6	57.6	78.4	
Trade relations for RES (transformation module)									
Avoided fossil fuel imports due to RES	€/MWh 2005 / a	43.1	62.8	109.5	145.0	64.0	157.6	232.4	
Net exports of global cost components of RES technologies with rest of the world									
scenario moderate exports	€/MWh 2005 / a	3.6	5.1	6.6	6.1	5.4	9.0	8.0	
scenario optimistic exports	€/MWh 2005 / a	3.7	5.6	8.7	12.2	6.0	11.4	17.6	
Macroeconomic impacts of RES									
Gross value added	€/MWh 2000 / a *	5.8							
scenario moderate exports (gross effect module)	€/MWh 2005 / a		6.5	90	122	70	129	188	
scenario optimistic exports (gross effect module)	€/MWh 2005 / a		6.5	101	128	70	131	197	
Gross employment	million jobs *	13.8							
scenario moderate exports (gross effect module)	million jobs		14.7	2.31	2.34	1.58	2.36	3.35	
scenario optimistic exports (gross effect module)	million jobs		14.8	2.34	2.40	1.59	2.80	3.48	
Net GDP effect									
scenario moderate exports	% of GDP 2020		0.08	0.14	0.30	0.09	0.25	0.40	
scenario optimistic exports	% of GDP 2020		0.08	0.14	0.31	0.09	0.26	0.44	
Net employment effect									
scenario moderate exports	thousand jobs		32.6	201	300	37	417	59	
scenario optimistic exports	thousand jobs		331	211	339	375	432	128	
Net GDP effect									
scenario moderate exports	% of GDP 2020		0.31	0.31	0.35	0.21	0.23	0.35	
scenario optimistic exports	% of GDP 2020		0.32	0.31	0.29	0.22	0.25	0.44	
Net employment effect									
scenario moderate exports	thousand jobs		19.8	15	18.8	315	390	545	
scenario optimistic exports	thousand jobs		211	145	262	327	428	656	

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- Μελέτη ΟΗΕ/UNEP & Διεθνούς Οργανισμού Εργασίας «Πράσινες θέσεις απασχόλησης : Για μια αξιοπρεπή εργασία σε ένα βιώσιμο κόσμο χαμηλών εκπομπών άνθρακα» (Σεπτέμβριος 2008)
- Μελέτη του Κεντρικού Συμβουλίου Δημάρχων των Η.Π.Α. «Τρέχουσες και μελλοντικές πράσινες θέσεις απασχόλησης στην Αμερικανική οικονομία» (Οκτώβριος 2008)
- Πακέτο Barack Obama : Επενδύσεις ύψους 150 δισεκ. δολλαρίων, σε μία 10ετία, στην πράσινη ενέργεια, για τη δημιουργία 5.000.000 νέων θέσεων εργασίας (U.S. Stimulus Bill, Φεβρουάριος 2009)
- Μελέτη της Ευρωπαϊκής Επιτροπής «Οι επιπτώσεις των πολιτικών ΑΠΕ στην οικονομική ανάπτυξη και απασχόληση στην Ευρωπαϊκή Ένωση» (Απρίλιος 2009)



Green Jobs:

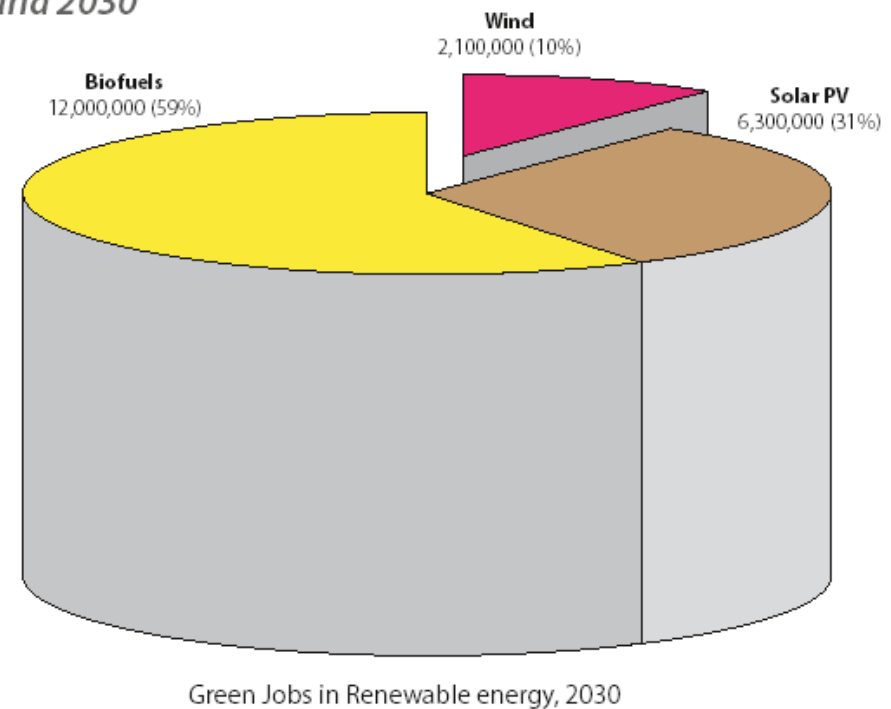
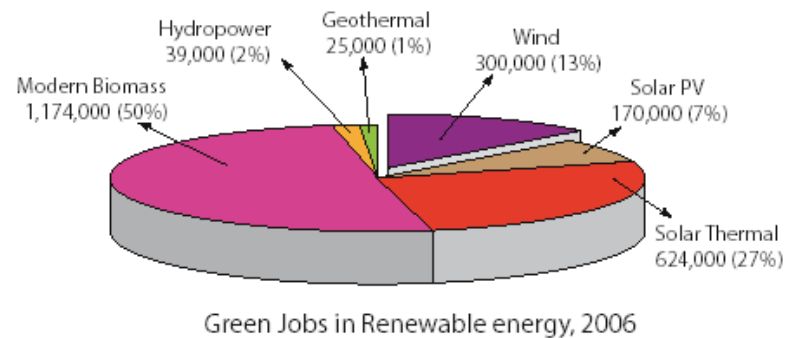
Towards decent work in a sustainable, low-carbon world



ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ: Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

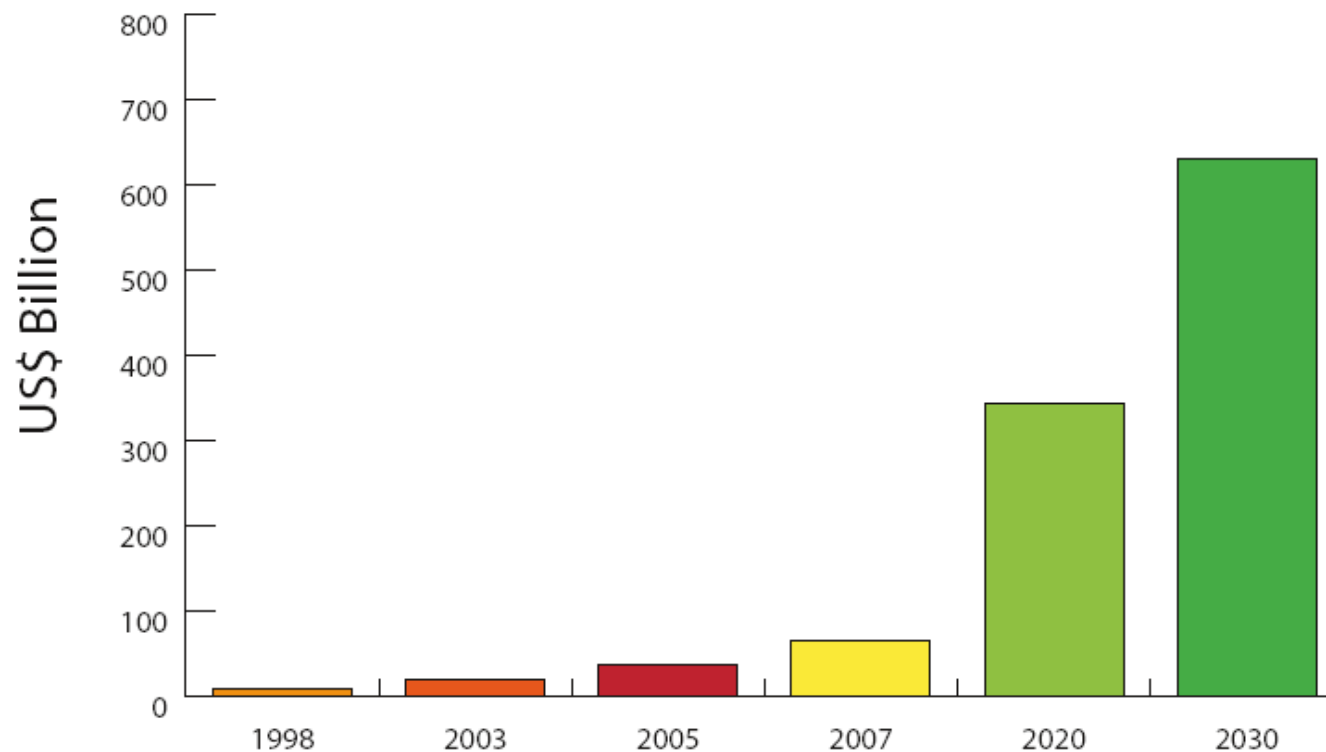
Figure 3: Green jobs in renewable energy 2006 and 2030

Source: *Green Jobs - Towards Decent Work in a Sustainable, Low-Carbon World*, UNEP/ILO/IOE/ITUC, September 2008



ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ: Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

Figure 4: Global investment in renewable energy (1998-2030)



Source: Green Jobs - Towards Decent Work in a Sustainable, Low-Carbon World, UNEP/ILO/IOE/ITUC, September 2008

U.S. Metro Economies

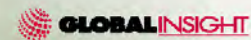
Green Jobs in U.S. Metro Areas
October 2008

Current and Potential Green Jobs in the
U.S. Economy

Prepared for:

The United States
Conference of Mayors
and the Mayors Climate
Protection Center

Prepared by:



THE UNITED STATES CONFERENCE OF MAYORS



ΟΙΚΟΝΟΜΙΚΗ ΑΝΑΠΤΥΞΗ, ΑΠΕ & ΑΠΑΣΧΟΛΗΣΗ: Η ΕΥΡΩΠΑΪΚΗ ΚΑΙ ΔΙΕΘΝΗΣ ΔΙΑΣΤΑΣΗ

Potential New Green Jobs 2038 - U.S. Total			
	2018	2028	2038
Renewable Power Generation	407,200	802,000	1,236,800
Residential & Commercial Retrofitting	81,000	81,000	81,000
Renewable Transportation Fuels	1,205,700	1,437,700	1,492,000
Engineering, Legal, Research & Consulting	846,900	1,160,300	1,404,900
Total	2,540,800	3,481,000	4,214,700

«The potential growth in Green Jobs is significant in that it could be the fastest growing segment of the United States economy over the next several decades and dramatically increase its share of total employment. The current count of 750,000 jobs amounts to less than onehalf of a percent of total current jobs. The generation of 4.2 million new Green Jobs would more than quintuple the total count and could provide as much as 10% of new job growth over the next 30 years».