



Green Financing Tools for the Banking Sector

الاقتصاد الأخضر

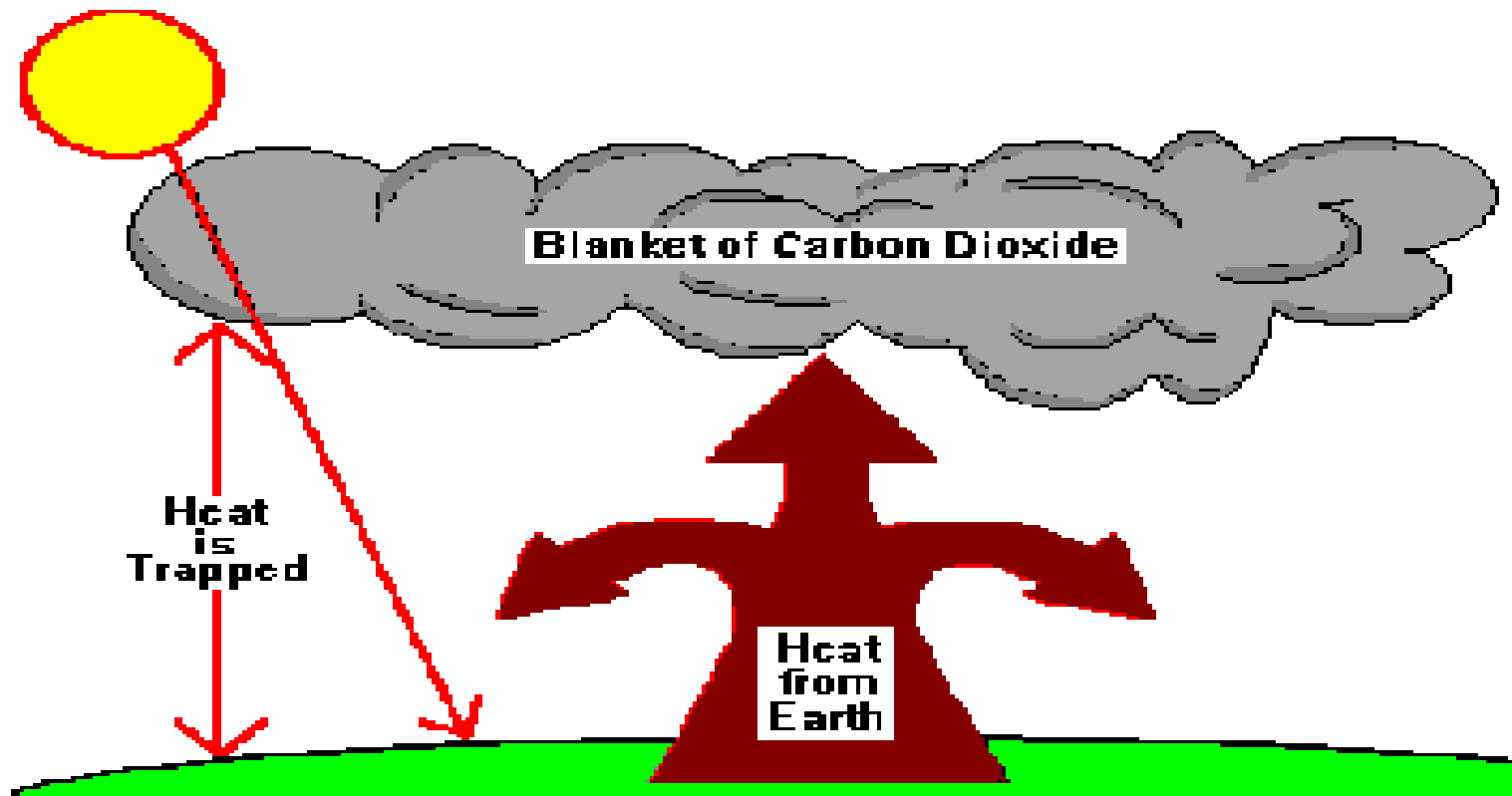
The Association of Banks in Jordan

جمعية البنوك في الاردن

١٨th of September 2011

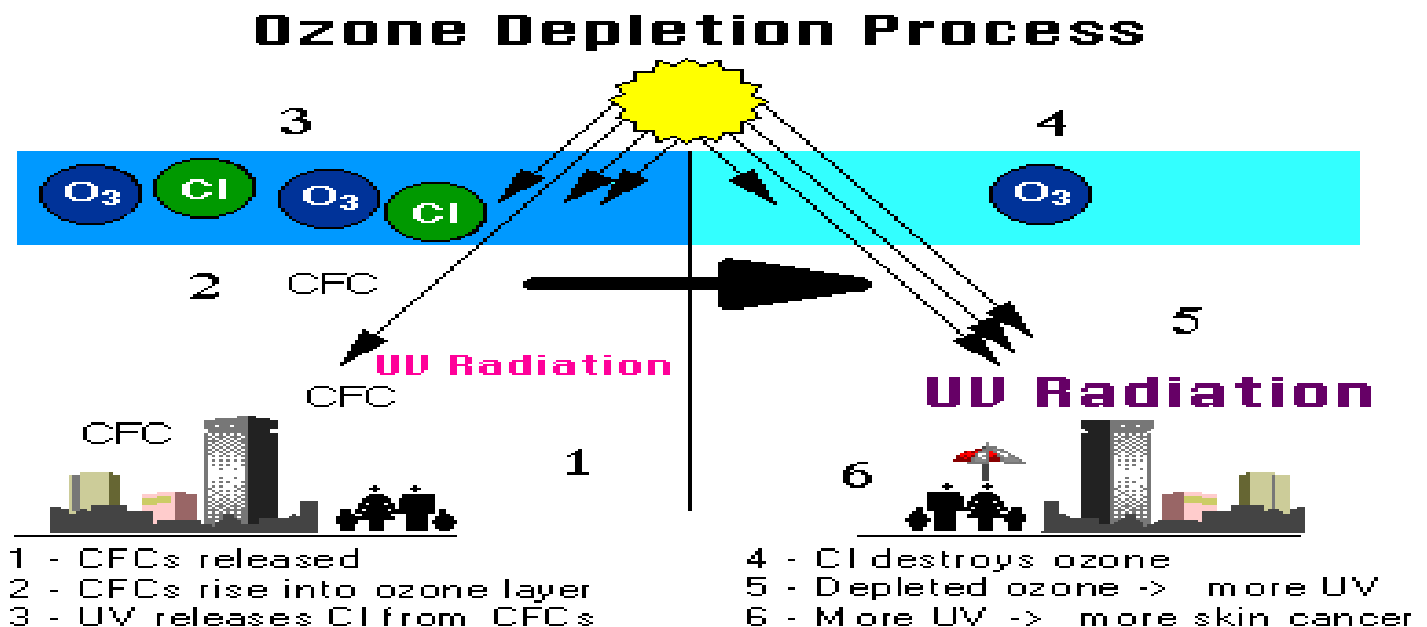
By: Raouf Dabbas
Senior Advisor
Ministry of Environment

CLIMATE CHANGE تغير المناخ



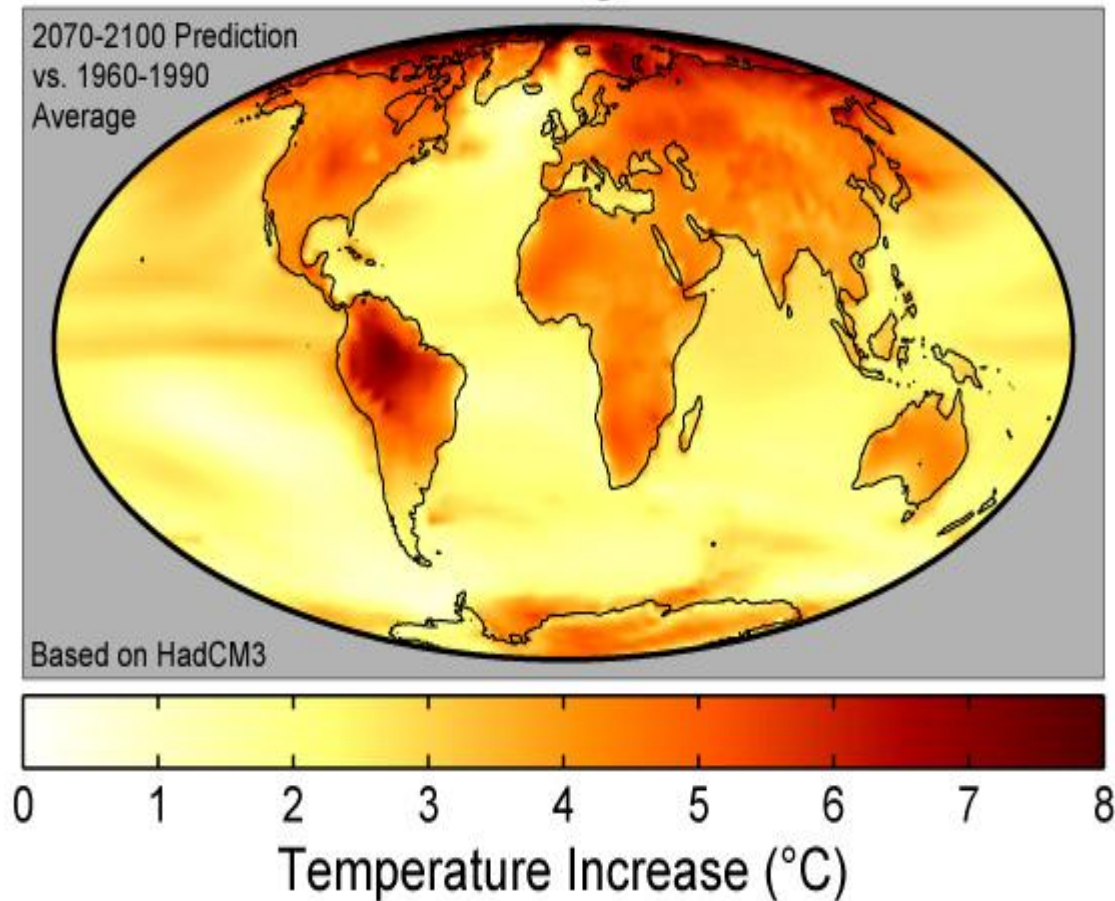
استنزاف طبقة الاوزون OZONE DEPLETION

CFCs and other chemicals interfere with the photochemical reactions in the ozone layer and prevent the reformation of ozone



ارتفاع درجة الحرارة Global Warming

Global Warming Predictions



الجفاف Drought



"The Quadruple Squeeze"

Human growth
20/80 dilemma

النمو السكاني

Ecosystems
60 % loss dilemma
نوع الحيوي

التغير المناخي

Climate
550/450/350
dilemma

المجهول

Surprise
99/1 dilemma



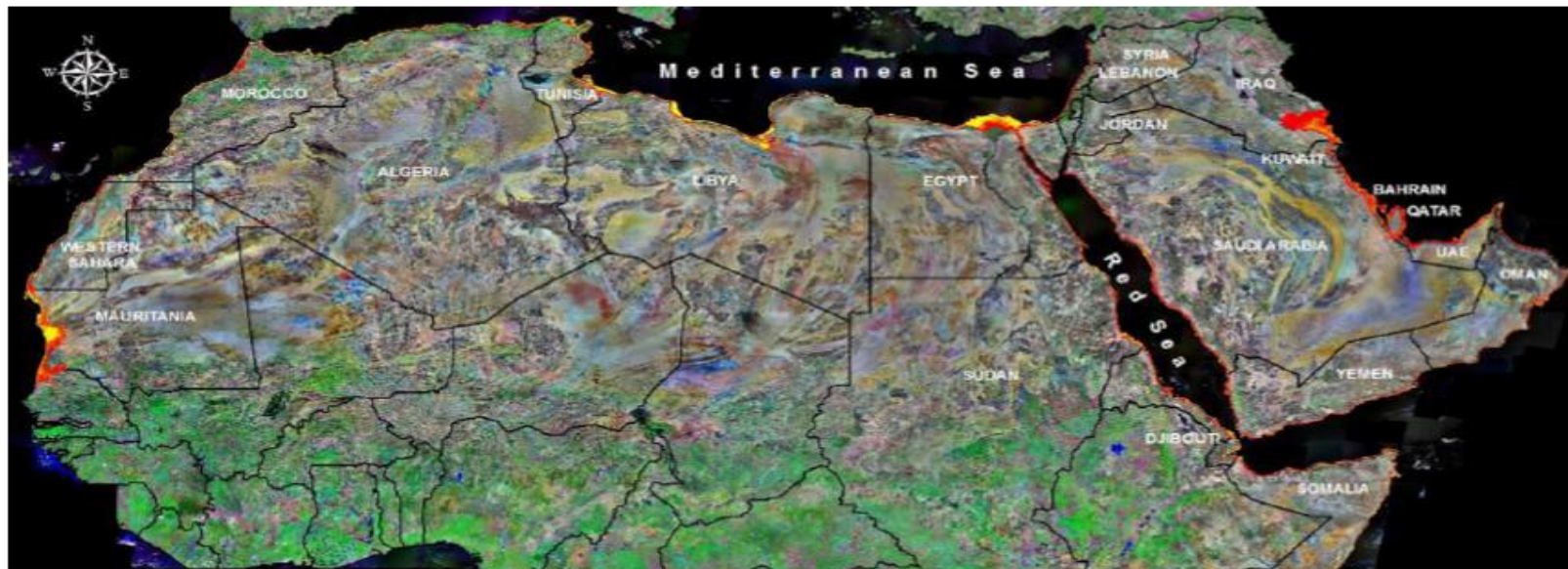
Impacts in the Arab World

تقرير المنتدى العربي للبيئة والتنمية

المنتدى العربي للبيئة والتنمية
ARAB FORUM FOR
ENVIRONMENT AND DEVELOPMENT



Based on the 2009 AFED Report, we can categorically state that the Arab countries are in many ways among the most vulnerable in the world to the potential impacts of climate change.





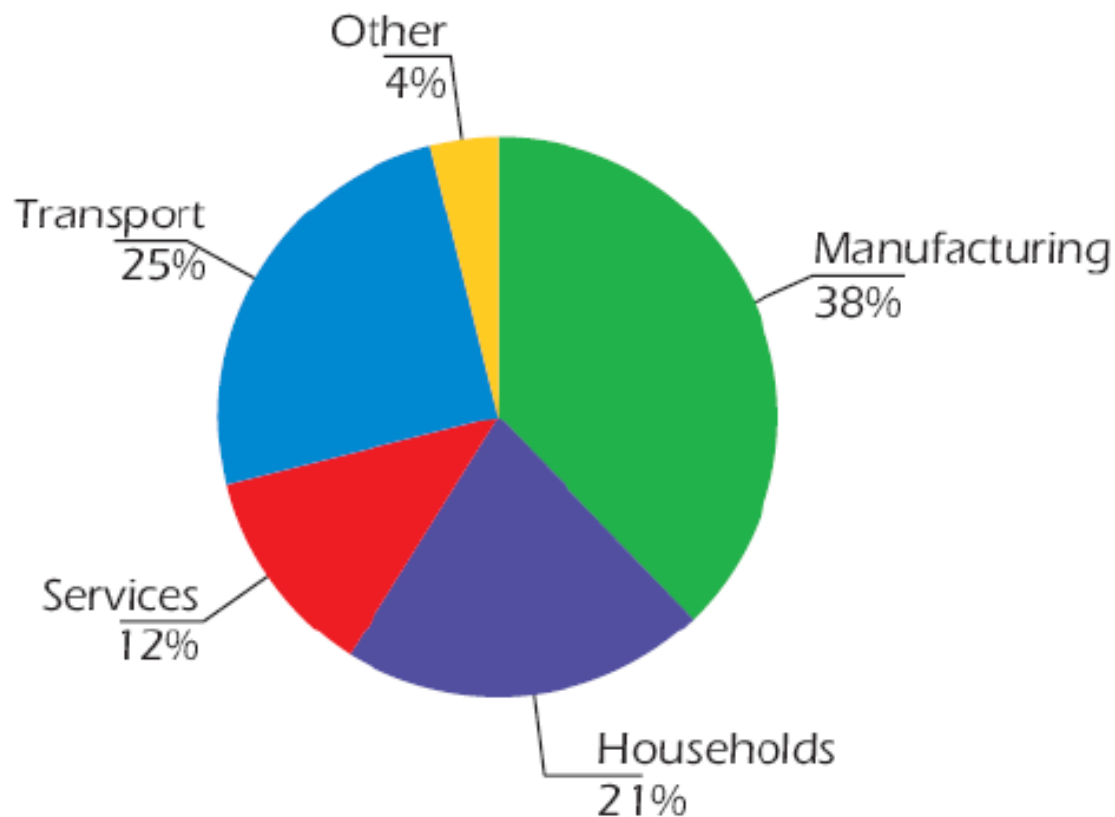
الأردن:

- ✓ ٥,٧ مليون عدد سكان
- ✓ ٨٠ % من السكان في مدن
- ✓ تدني مصادر الزراعيه
- ✓ عدم وجود مصادر للنفط
- ✓ استهلاك الفرد يقدر ب ١٦٠ م م متر مكعب بالسنة
- ✓ العجز المائي يساوي ٥٠٠ م م مكعب بالسنة
- ✓ حجم انبعاثات ثاني اكسيد الكربون ٢٠٠٠٠ طن سنويا و = ٠,١ % من انتاج العالمي

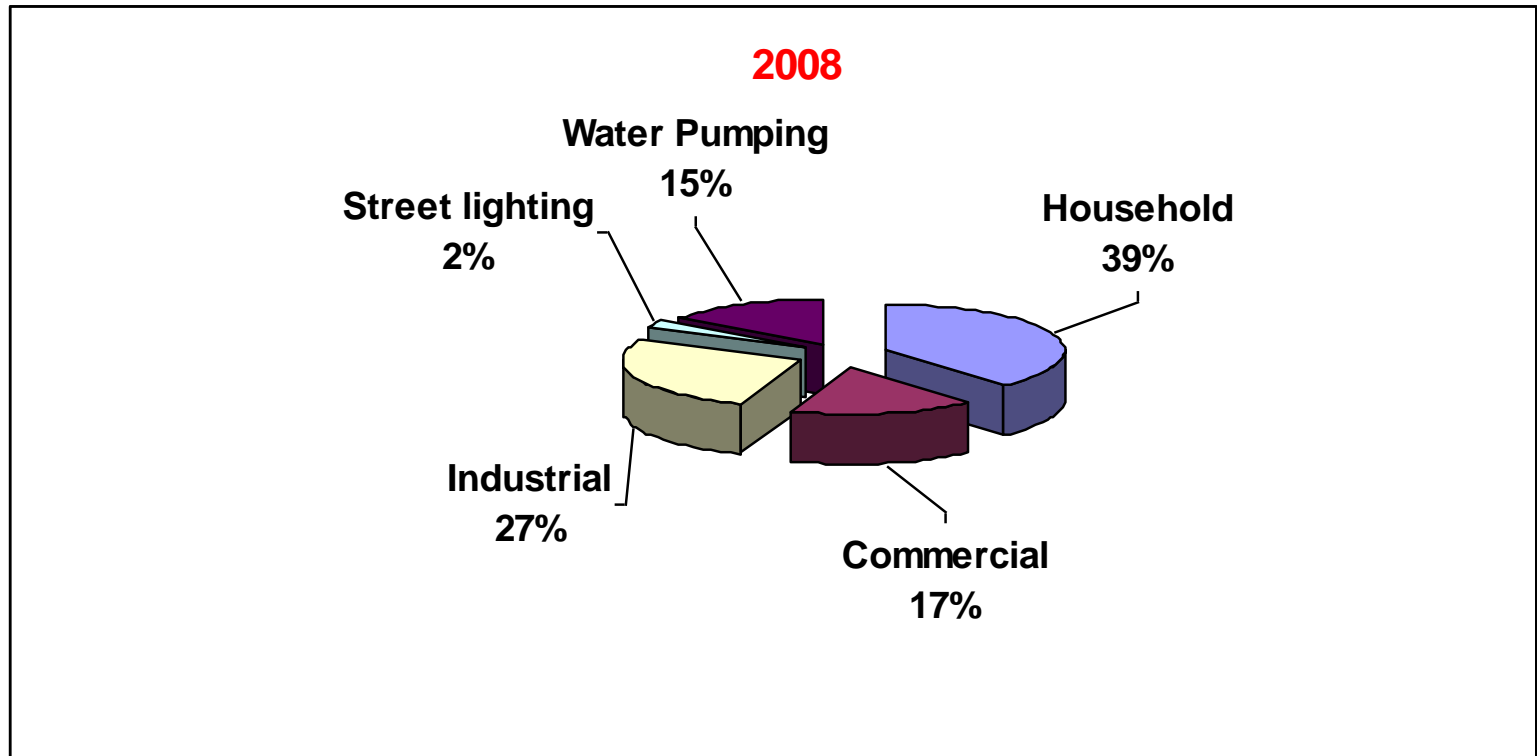
تتوزع نسبته الانبعاثات كما يلي :

- انتاج الطاقه. 74%
- النفايات 13.5 %
- الصناعه 7.9%
- حرائق 3.7%
- زراعته 0.9%

Total direct and indirect CO₂ emissions in 2005: 21 Gt CO₂:

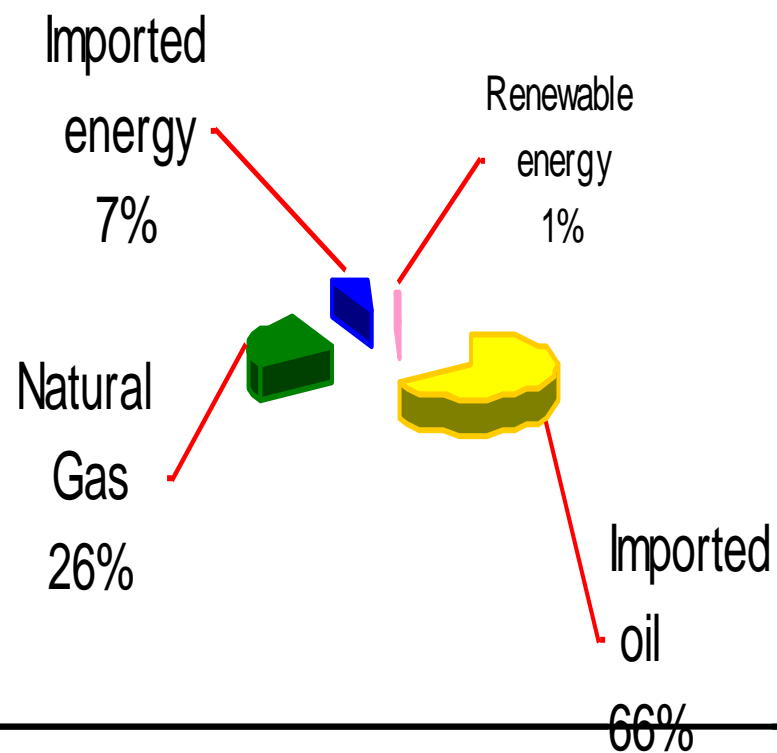


مصادر الطاقة

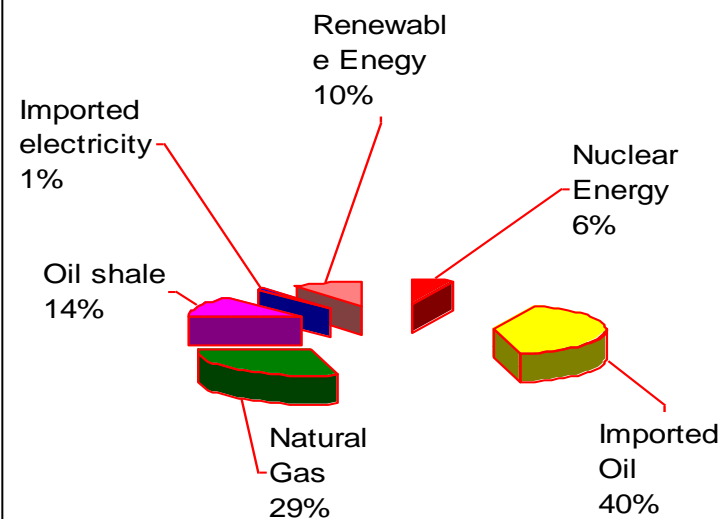


خريطة الطاقة

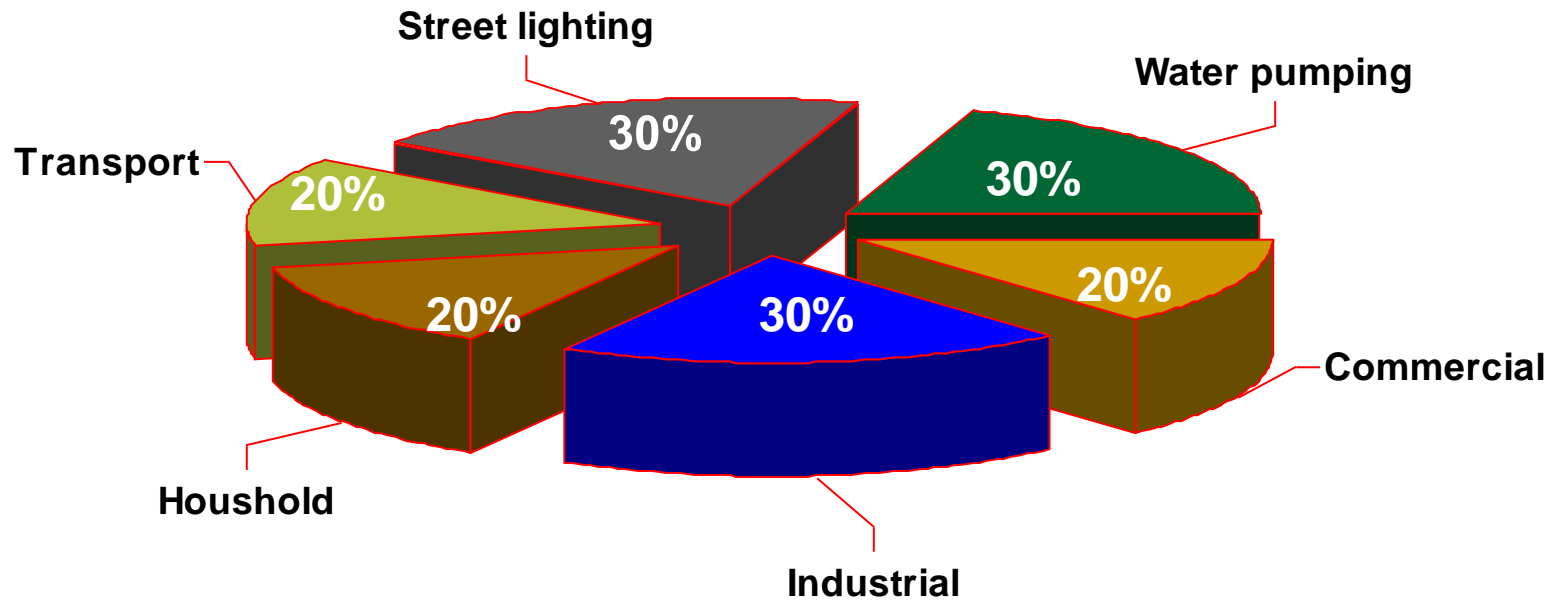
(2007)



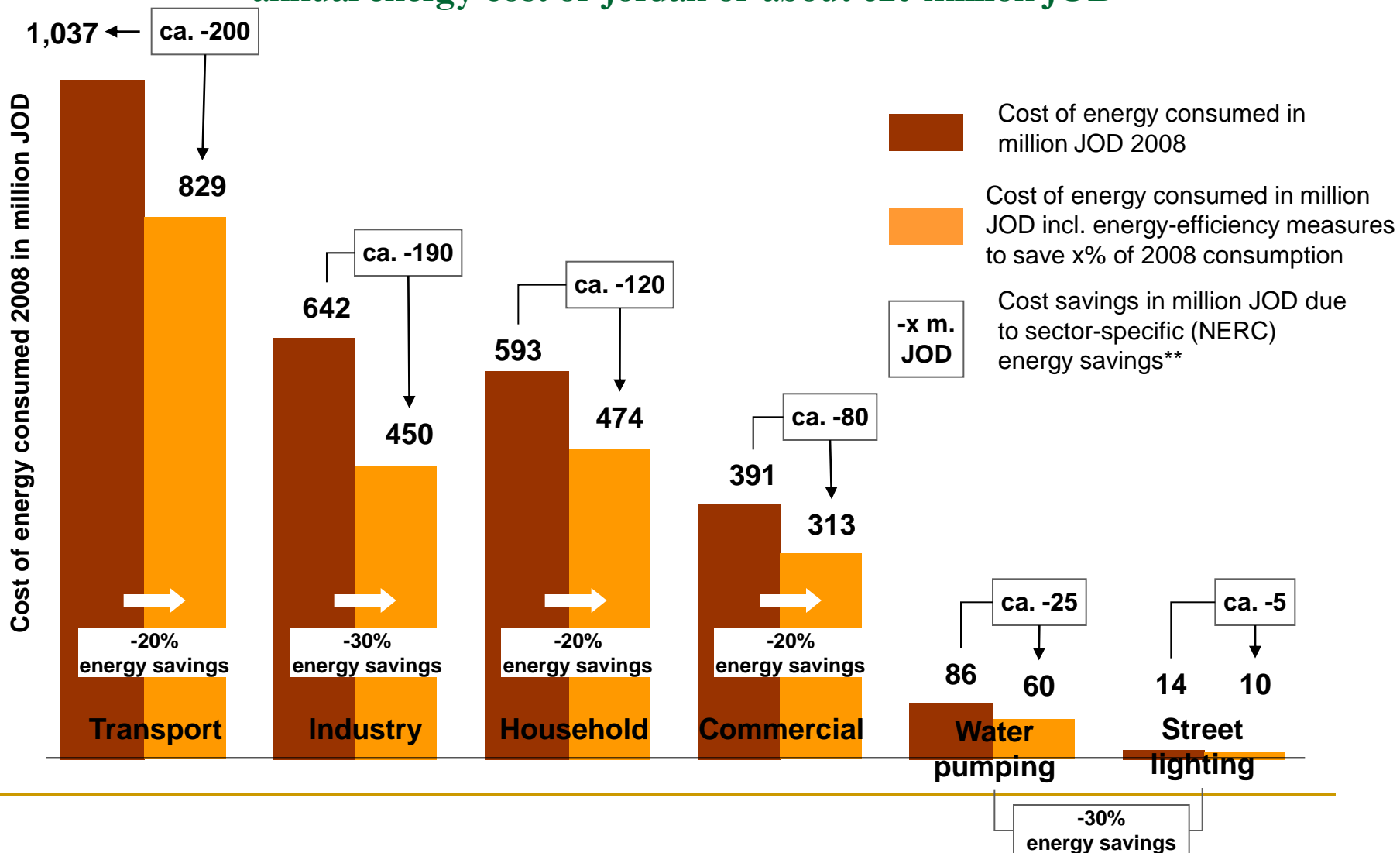
(2020)



Energy saving per sector:



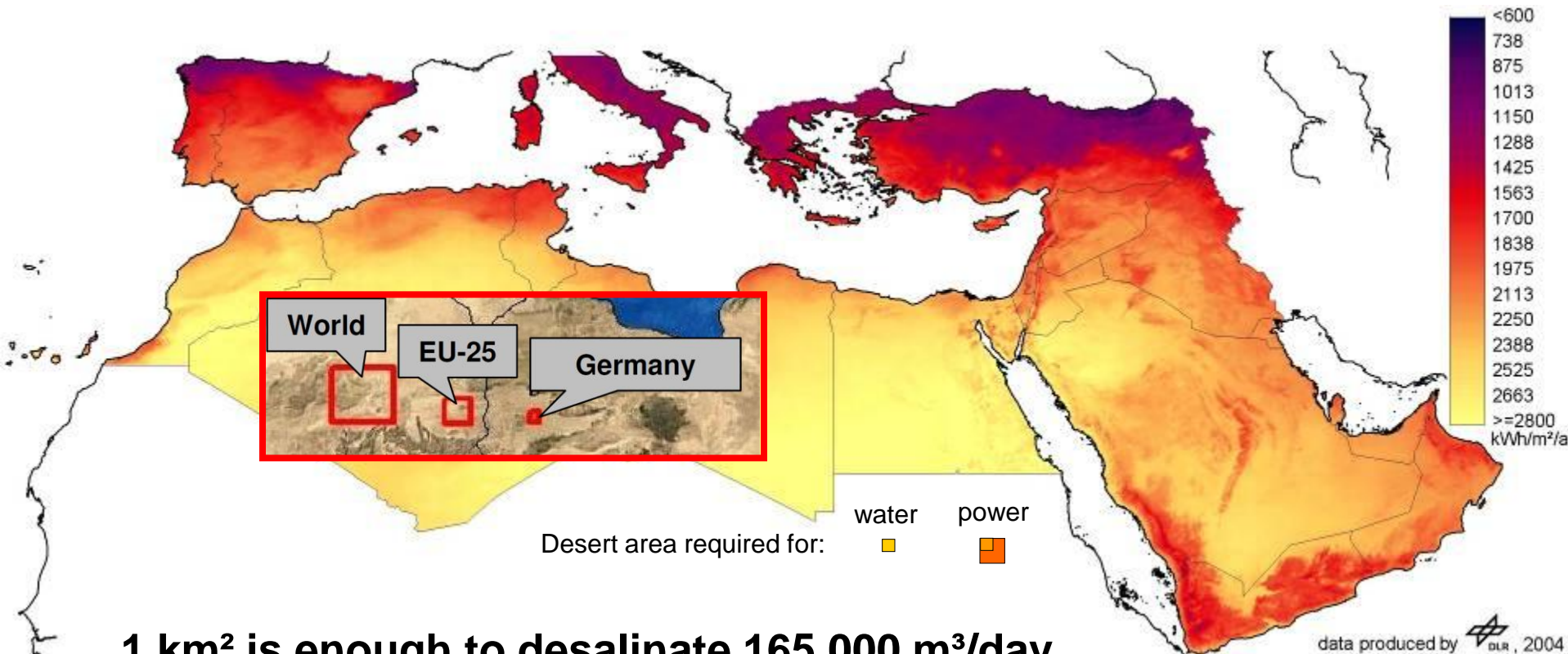
Savings of 20 - 30% of final energy consumption per sector represents a reduction in annual energy cost of Jordan of about 620 million JOD*



* Internal estimations (Ministry of Environment/ CIM)

** Calculated by applying the sectors' share in final energy consumption to the total cost of consumed energy (2008=2,763 Million JOD; MEMR-Facts & Figures)

Direct Solar Irradiance in EUMENA in kWh/m²/y



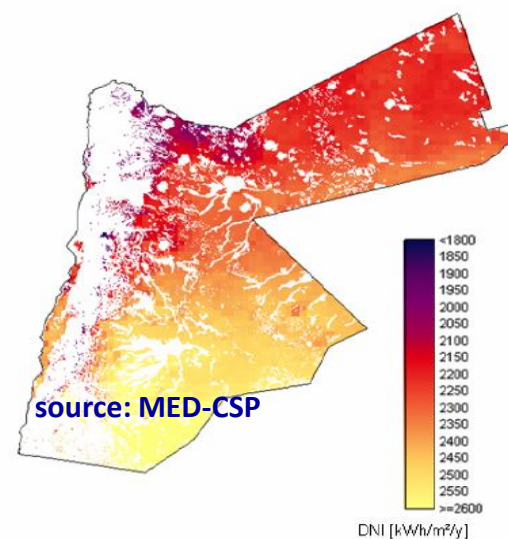
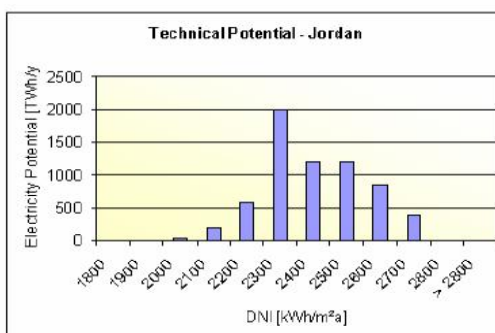
1 km² is enough to desalinate 165,000 m³/day.

50 km x 50 km are needed to avoid the MENA water deficit in 2050.

Solar irradiance 2400 kWh/m²/year x 10 % CSP efficiency / 4 kWh/m³ RO power consumption / 365 days/year = 0.165 m³/m²/day

Annual Sum of Direct Normal Irradiation in 2002 in Jordan.

Solar Thermal Electricity Generating Potentials in Jordan



Technical Potential: 6434 TWh/y (DNI > 1800 kWh/m²/y)
Economic Potential: 6429 TWh/y (DNI > 2000 kWh/m²/y)
Power Demand 2000: 7 TWh/y
Power Demand 2050: 50 TWh/y (Scenario CG/HE)
Tentative CSP 2050: 40 TWh/y (Scenario CG/HE)
Coastal Potential: 0 TWh/y (< 20 m a. s. l.)
Water Demand 2050: 3.5 TWh/y (Power for Desalination)

Jordan has the capacity of generating approximately 1.5×10^8 GWhr/yr which equals approximately 25cm of Crude Oil covering the surface of Jordan every year.

Annual average windspeed :

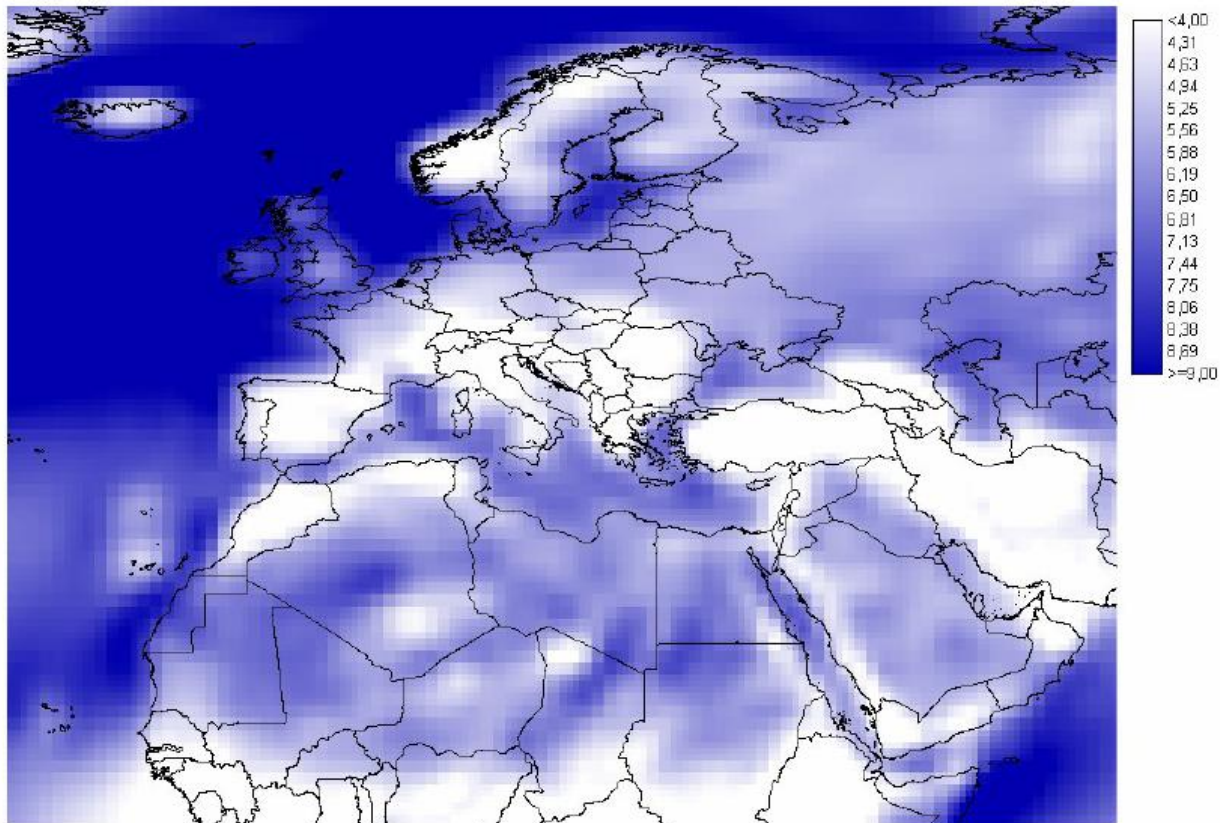


Figure 3-11: Annual average wind speed at 80 m above ground level in m/s. Source: Prepared by DLR with data from ECMWF, ISET for /WBGU 2003/



Barriers to sustainable energy

■ Awareness

- ❑ Industry
- ❑ General public
- ❑ Use of public sector

■ Capacity

- ❑ Utility
- ❑ Energy Service Companies ESCO/equipment
- ❑ Industry

■ Commercial

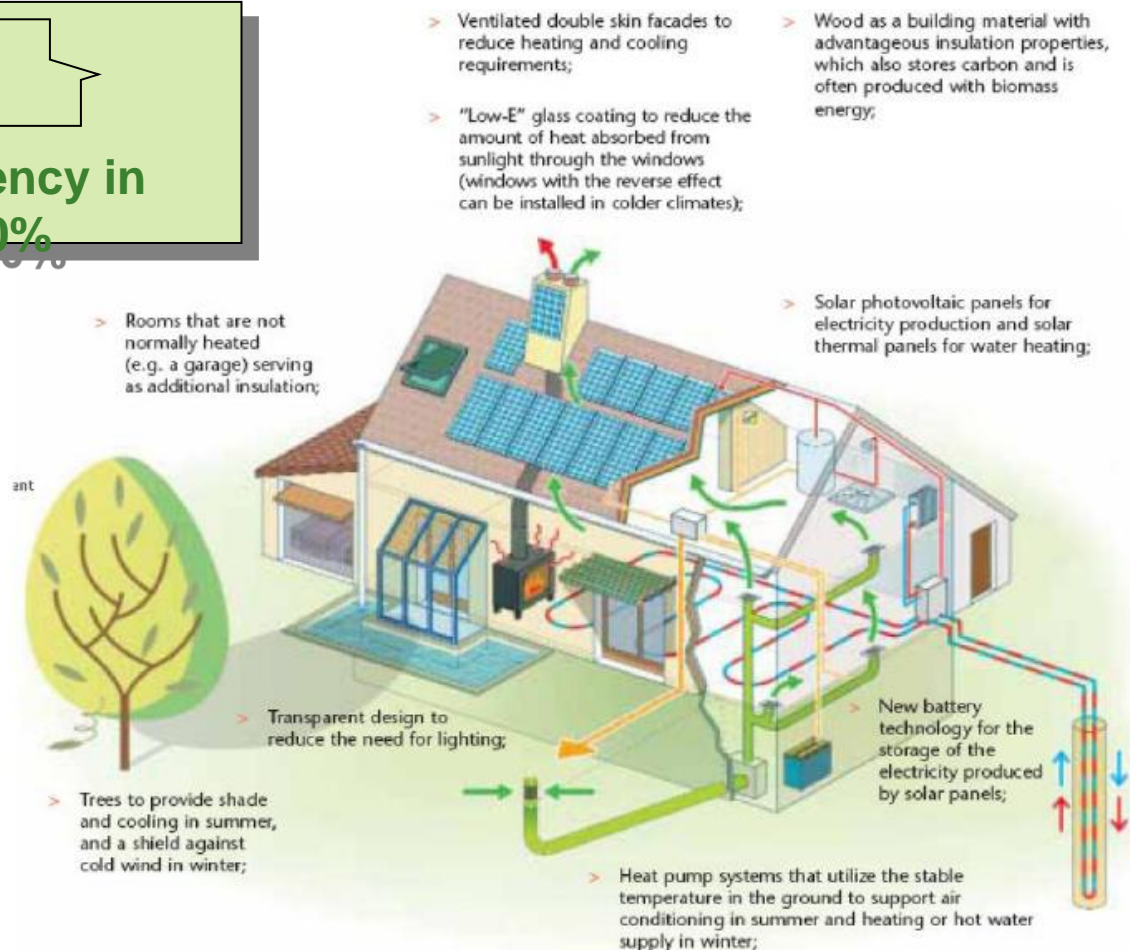
- ❑ Incentives
- ❑ Business case

■ Financial

- ❑ For market technical capacity
- ❑ For transactions

Example: Measures in the building sector

Energy efficiency in homes 20%



Available & Mature technology



SEGS 350 MW, California





Potential of Improving Energy Efficiency-case studies

Company Name	Total Cost Saving (JD)	Energy Consumption (JD/Year)	Saving %	Pay Back Period (Yr)	Investment Required (JD)
Arab Center for Heart and Special Surgery	67,989	313,832	22%	1.8	123,102
Radisson SAS Hotel (Amman)	35,168	243,796	14%	1.4	15,731
Radisson SAS Hotel (Aqaba)	68,275	197,996	34%	1.3	87,544
Le Meridien Hotel (Amman)	203,962	777,883	26%	1.7	382,387
Grand Hyatt Amman Hotel	112,971	578,714	20%	2.5	235,285
Movenpick Resort & Spa Dead Sea	76,821	665,625	12%	0.8	60,052
Movenpick Resort Aqaba	86,449	358,223	24%	1.9	164,819
Four Seasons Hotel (Amman)	120,307	648,569	19%	1.4	170,670
Jordan Kuwait Bank	17,854	103,505	17%	1.3	23,579
Industrial Development Bank	4,020	33,065	12%	2.9	11,711
TOTAL	793,806	3,917,828	20%	1.6	1,274,880

Enabling Green Financing

Intervention	Comments
Policy support to enable the range of finance required ¹	Early stage venture for new manufacturing Private equity Debt Consumer and end use
Subsidizing cost of capital	Useful to get the process started but can become a dependence and market may fail once the subsidy is phased out
Subsidizing risk	Very critical and efficient as the FI gets more comfortable with the business, this can be phased out
Subsidizing transaction costs	Necessary and efficient as the FI builds capacity and familiarity with the market, the market grows, transaction costs drop as a % of business enabling this to be phased out
Awareness creation of benefits	Critically important as financiers typically tend to be conservative.

¹ more details on following slides



IFC Financial Products

Financial Products	Potential for use
Risk Sharing Facility (unfunded / funded)	Addresses risk perception and exposure barriers
Credit Line	Addresses liquidity barrier
Long term credit line	Asset liability matching and liquidity
Sub-debt / mezzanine financing	Addresses risk appetite and financing shortfall
Investing in Sustainability-focused Private Equity Funds	To inject risk capital in climate friendly projects and companies
Trade Guarantees	Addresses risk perception associated with trade transactions

Incentivizing a Green Economy:

Market based incentives:

- Soft loans
- Rebates
- Private equity funds
- Private Equity and Venture Capital Funds
- Labeling

International trade agreements:

- Standards & certification
- CDM
- Credit Funds (AFD, GEF, IFC)

Government:

■ Fiscal incentives

- Tax exemptions
- Custom exemptions
- Subsidies
- Policies & Supporting regulatory frame work
- Loan Guaranties
- Green Funds
- Feed in Tariffs

National commitments:

- Media & awareness
- Education
- R&D
- Appropriate, suitable, affordable, Green Technology

Emerging Opportunities

- **Collective global “rethink”** of development and business models
- Governments looking for ways to **stimulate economic activity and create jobs**
- Significant **international momentum** for transition to a green economy

Green Economy Report



Agriculture
Building
Cities
Energy
Finance
Forest
Manufacturing
Tourism
Transport
Waste
Water
Modeling
Enabling Conditions



Addressing the financial barrier

- How to get local financial institutions to support sustainable energy in the country
 - ❑ Transaction costs associated with Capacity
 - ❑ Risk perceptions
 - ❑ Availability of the right type of capital (tenor, risk, return expectations)

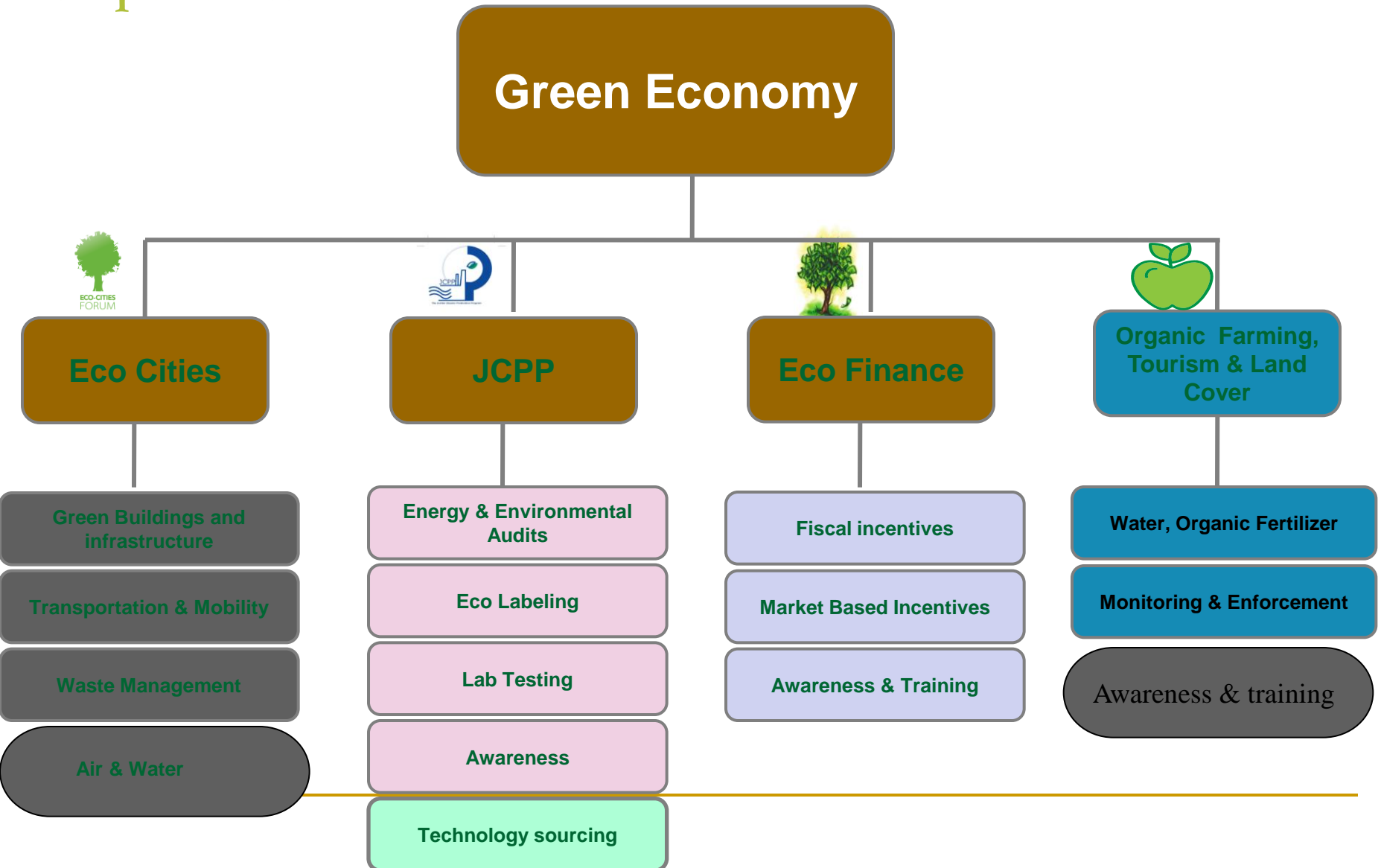
- IFC has experience in
 - ❑ Facilitating market capacity
 - ❑ Building FI capacity
 - ❑ Deploying financial products that address the risk perceptions of the market

Benefits and opportunities in a Green Economy

- For every 100 MW solar plants installed 400 full-time equivalent manufacturing jobs,
- For every 600 contracting and installation jobs, 30 annual jobs in Operations and Management
- New economic opportunities for tourism and health and industrial sectors
- Out of a total 700243 cars in Jordan only .38 % are hybrids



Components:





MINISTRY OF ENVIRONMENT

Thank you