



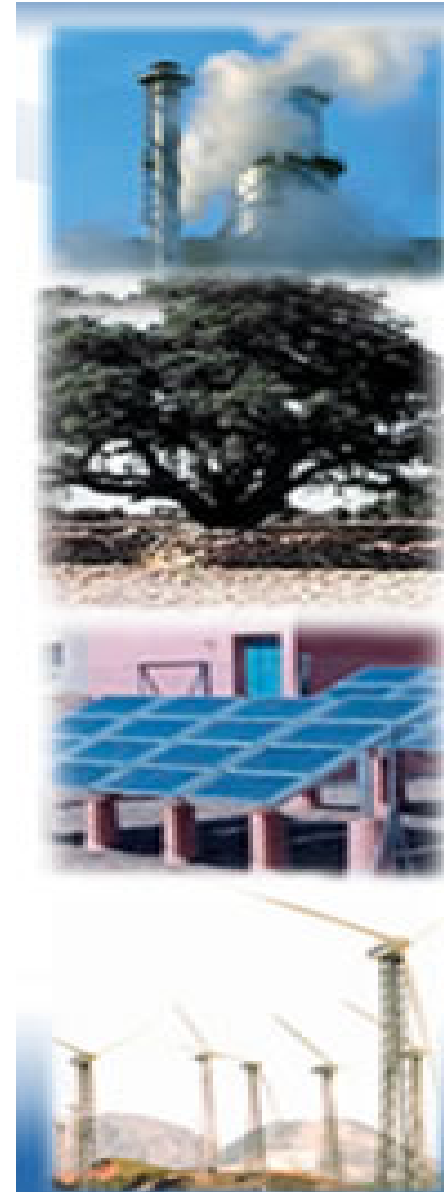
Clean Development Mechanism

Concepts & Benefits

***The first Workshop on CDM Process
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**NAJMIDEEN JALOUTA
ENVIRONMENT CONSULTANT
NCCC MEMBER**





1- INTRODUCTION;

The increasing use of fossil fuels in human activities leads to the emission of large amounts of greenhouse gases (GHG), in particular in industrialized countries. This results in changes of the climatic patterns such as rising the mean surface temperatures and more extreme weather events.

Recent years have witnessed an intensified international diplomatic effort to achieve stabilization of GHG concentration in the atmosphere.

The complexity of the climate change issues underscores the need to adopt new and more effective mechanisms for emissions mitigation through forms of international Cooperation.

One of the mechanisms for international GHG abatement is the Clean Development Mechanism (CDM), as described in Article 12 of the Kyoto Protocol.



1-INTRODUCTION; cont,

Because of the newness and haziness of the concept (at least in the developing countries) , there was scant interest for the CDM.

Existing governmental and private sector institutions and Non Governmental Organizations (NGOs) are the key players and potential participants in the CDM. In addition, the legislation and regulatory framework pertaining to CDM project implementation are should be reviewed by the country.

With regard to CDM awareness, there is a need to increase awareness amongst various institutions and authorities especially those related directly to investment to ensure their full participation in the CDM process.



1-INTRODUCTION; cont,

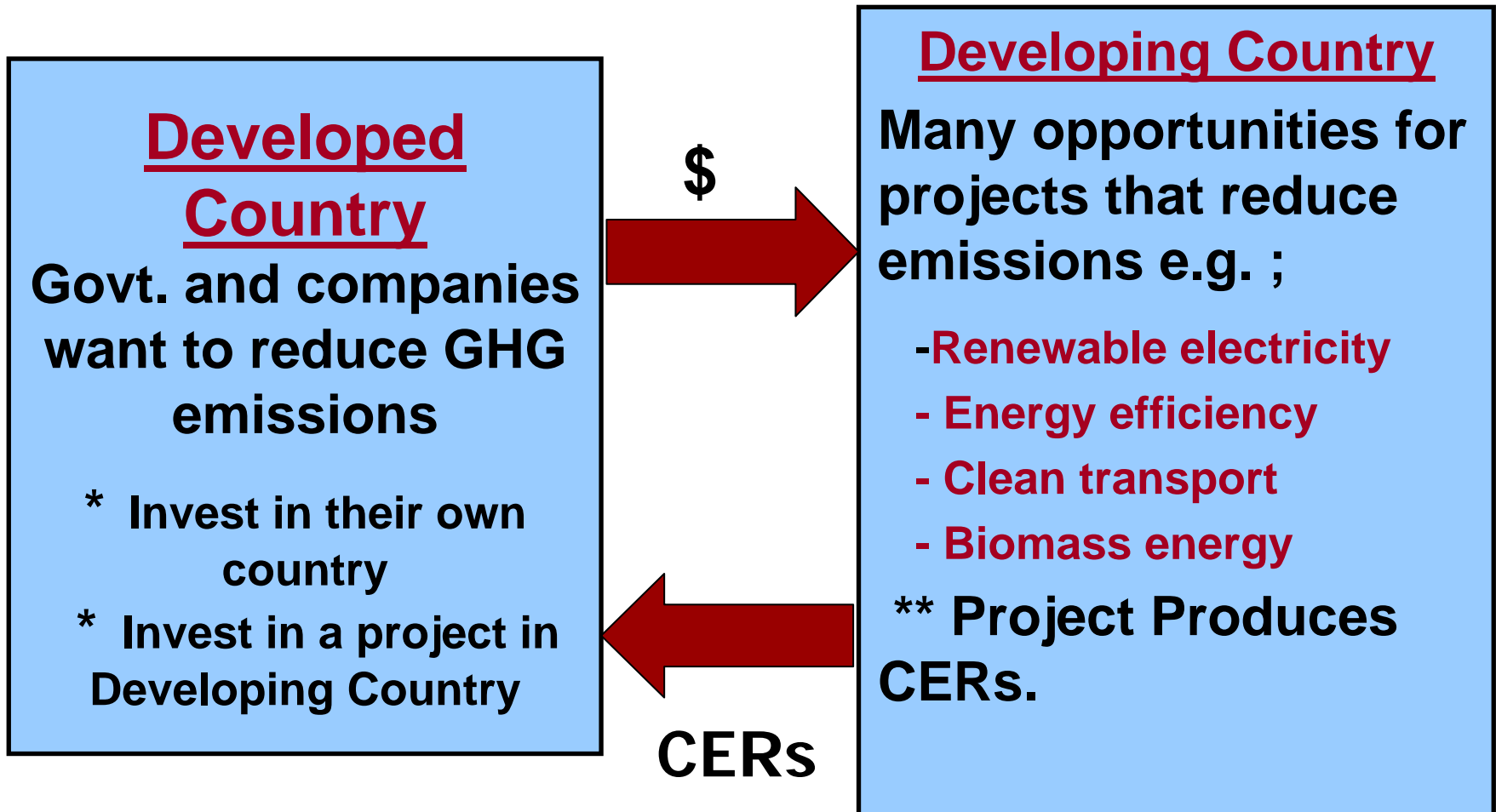
Capacity building is a vital element to create, build and sustain such capacities in LIBYA . Those capacities can participate on both national and regional CDM projects.

In short, an Annex I country (or firm) pays for GHG mitigation in a developing country through CDM projects.

A CDM project has to comply with the criteria set by the Kyoto Protocol and has to be approved by the host and investor countries.

The investing paying country obtains certified emission reductions, which it can use to comply with its Kyoto commitment.

2- CDM Concept





3- CDM & SUSTAINABLE DEVELOPMENT.

The project must comply with national criteria for sustainable development including;

Social Criteria

Improves quality of life

Alleviates poverty

Improves Equity

Economic Criteria

Provides financial returns to local entities

Results in new investments

Transfers new technology

Environmental Criteria

Reduces GHG and use of fossil fuels

Conserves local resources

Reduces pressure on local environments

Provides health and environmental benefits



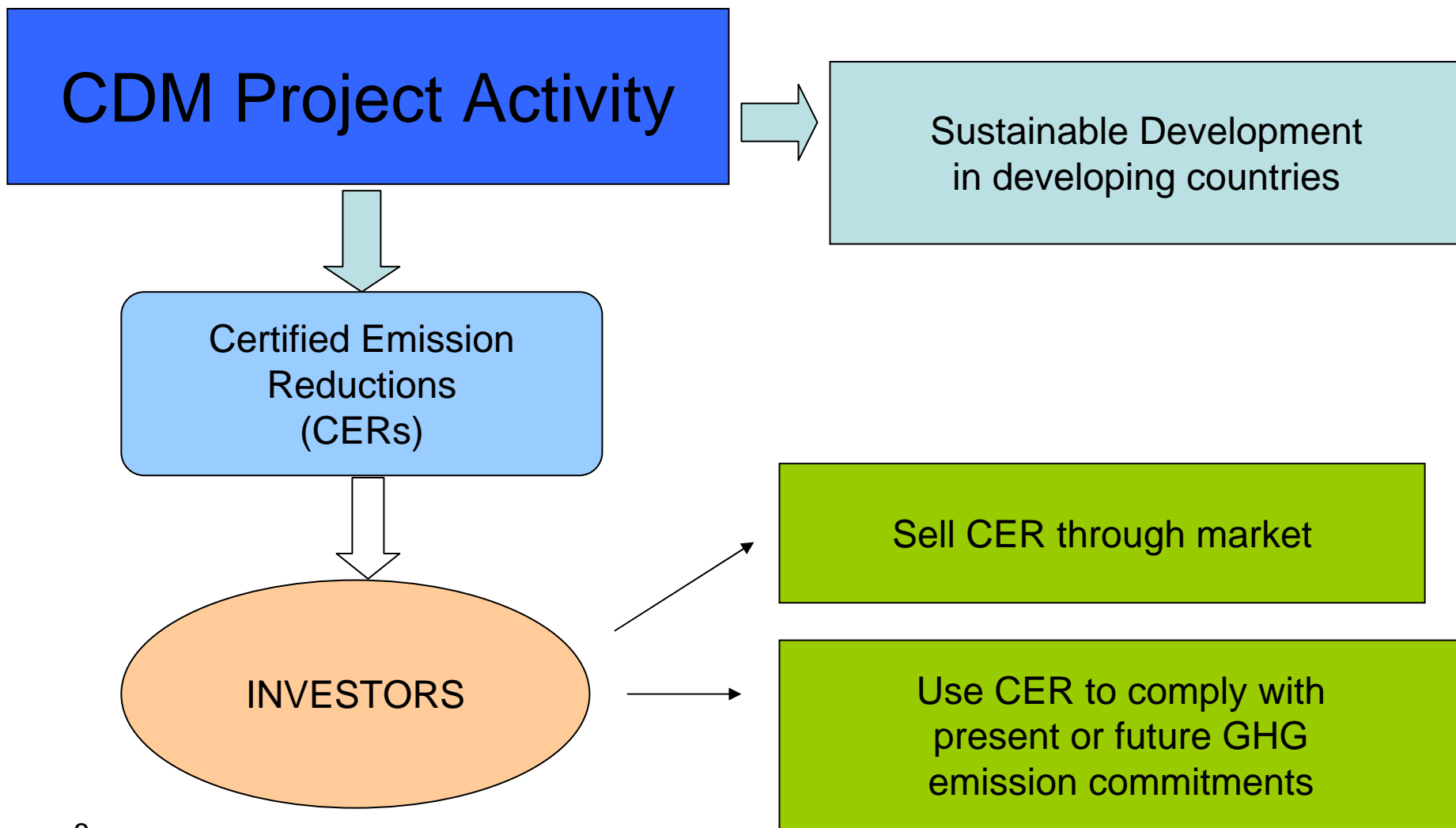
4- HOW DOES THE CDM AFFECT DEVELOPING COUNTRIES.

- Although developing countries have no obligations to constrain their GHG emissions, they are able, on a voluntary basis, to contribute to global GHG emission reductions by hosting projects under the CDM.

- When the Kyoto Protocol becomes fully operational, it is anticipated that these 'carbon credits' will be bought and sold in a new environmental market; they are already becoming a commodity.



9 - CDM overview





5 - Some Important Industries in Libya
worth to be as CDM project;



6- Cement Industry;

Visual aesthetic impact;

- **Air pollution;**

- in the baking stage and burning up of the fuel stage ; a large amounts of CO₂ as GHG, are released,
- and lesser amount of SO_x, NO_x and CO, mixed with the dust are released.

- **Dust;**

- the impact of dust emitted by the cement factory is of high significance and intensity which occurs in some stages of production;



Cement Industry; cont.

- **Noise pollution**
- **Soil Pollution**- the continue release of dust with iron oxides affect the local soil;
- **Impact on the terrestrial** and marine ecosystem;
- **Occupational health** and safety of workers and local communities



Cement Industry; cont.

- **CDM proposal for Cement Industry;**
 - **Increased blending by mixing fly ash.**
 - **Energy efficiency improvement by up-gradation of pre-heater, clinker cooler etc.**
 - **Partial substitution of fossil fuel with alternative fuels.**



7- CDM Benefits in cement projects;

- **Increased levels of efficiency;**
- **Increased reliability and performance of new technologies**
- **Improve air quality;**
- **Reduce waste production;**
- **Social benefits and employment opportunities.**



8- CDM- Steel Industry;

- **Use of blast furnace gas for power generation.**
- **Utilization of heat of combustion of blast furnace gas in reheating furnace of Wire rod mill etc.**
- **Recovery of processed waste heat**



10- BENEFITS OF CDM PROJECTS;

- Increased project profitability as certified emission reductions can usually be sold at a profit.**
- Increase of foreign investment and source of foreign currency.**
- Renewal of important infrastructure such as power stations, transport systems, sewage treatment plants, etc.**
- Transfer of appropriate clean and reliable technology strengthens industry sector , brings local environmental benefits such as pollution reduction and capacity building.**



10- BENEFITS OF CDM PROJECTS; cont.

- CDM investments create employment opportunities for local labor and therefore contribute to community welfare.
- Strengthening the local economy.**
- **Capacity building in clean technologies may allow local suppliers and consultants to export equipment and services for CDM projects in the region**



10- BENEFITS OF CDM PROJECTS; cont.

- **CDM encourages developed countries to undertake GHG reduction projects in developing countries.**
- **Increased investment flows.**
- **Attract capital for less carbon-intensive projects.**
- **Technology transfer.**
- **Assist in development priorities and sustainable development goals.**



10- BENEFITS OF CDM PROJECTS; cont.

- **Create new industries in environmentally sustainable technologies.**
- **Poverty alleviation through income and employment.**
- **Assist in improving current and future environment (including air quality).**

**11- SOME INDUSTRIAL PROJECTS IN LIBYA
MIGHT BE CONSIDERED AS CDM PROJECTS;**

OIL & GAS SECTOR;

The main emitters of CO₂ in 2003 in Libya, are fuel combustion in the power generation sector (38%), in the transport sector (20%) and in industry (8%).

Other sectors represent 34%. In total, energy-related emissions are responsible for almost 100% of CO₂ emissions in the country .



11- SOME INDUSTRIAL PROJECTS IN LIBYA

ELECTRICITY

MIGHT BE CONSIDERED AS CDM PROJECTS;

- **LIBYA** is a Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified June 14th, 1999) and it is a signatory to the Kyoto Protocol.

- Thus, Libya currently is eligible to the CDM. GECOL has already started contacts with international agencies and investors to use CDM for renewable energy development, (i.e.; using LNG instead of oil fuel in some desalination units) the Libyan government has already issued a law to encourage foreign investors for all sectors.





11- SOME INDUSTRIAL PROJECTS IN LIBYA
MIGHT BE CONSIDERED AS CDM PROJECTS;

SOLAR ENERGY

Libya is located in the middle of North Africa with 88% of its area considered to be desert areas, the south is located in the Sahara desert where there is a high potential of solar energy which can be used to generate electricity by both solar energy conversions, photovoltaic, and thermal.





11- SOME INDUSTRIAL PROJECTS IN LIBYA
MIGHT BE CONSIDERED AS CDM PROJECTS;

SOLAR ENERGY

Solar radiation;

- The solar radiation in Libya considered being very high direct radiation on the horizontal plan is reach up to 7.1 KWh/m² per day, while , The map for Libya indicating the radiation Level as in the following figure .

11- SOME INDUSTRIAL PROJECTS IN LIBYA

WIND ENERGY

MIGHT BE CONSIDERED AS CDM PROJECTS;

Wind Potential

The measured of wind energy showed high potential of wind energy in Libya, the figure shows the potential wind energy measured data on 40 m height for the costal side of Libya.

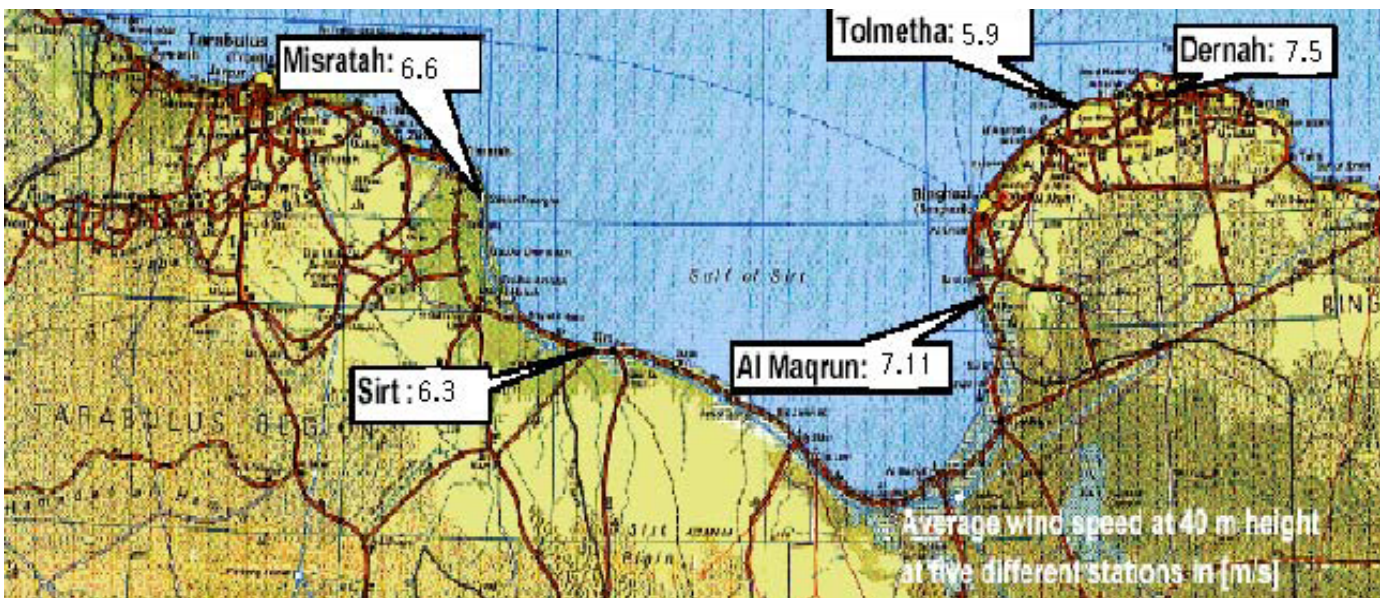


Table: Renewable energy sources for Libya

Type	Potential
Solar electricity	140,000 TWh/y
Wind electricity	15 TWh/y
Biomass	2 TWh/y
Total	157,000 TWh/y



11- SOME INDUSTRIAL PROJECTS IN LIBYA

WIND ENERGY

MIGHT BE CONSIDERED AS CDM PROJECTS;

In year 2000 the Libyan electricity utility GECOL began seeking professional engineering experts, to establish;

“ A pilot wind farm with up to 25 MW nameplate capacity along Libya’s coast line east of Tripoli “ with the following parameters

Site and height above ground level [m]		V mean in [m/s]	Weibull parameters	Power density in [W/m ²]	
A [m/s]		K			
1 – Misratah	40 m	6.8 m/s	7.6 m/s	2.35	305 W/m ²
2 – Sirt	40 m	6.7 m/s	7.6 m/s	2.53	285 W/m ²
3 - Al Maqrun	40 m	7.4 m/s	8.4 m/s	2.42	399 W/m ²
4 – Tolmetha	40 m	6.4 m/s	7.2 m/s	1.69	365 W/m ²
5 – Dernah	40 m	8.3 m/s	9.3 m/s	2.67	504 W/m ²



12- RECOMMENDATIONS:

- **Need to strengthen the capacity of consultants who specialized in CDM, because many companies with potential projects do not consider CDM as their core business.**
- **Need to access a systematically subsidies for cost of the development of PDD, validation and registration.**
- **Need to develop a national strategies on raising underlying project finance , including strengthening the engagement of local financial institutions.**
- **Need to design a system for easier access to data and information required by PDD such as baseline emission factors and summary analysis of sector-specific (e.g., renewable energy, waste management) public policies and regulations.**



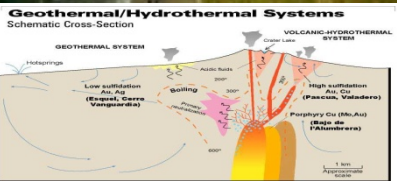
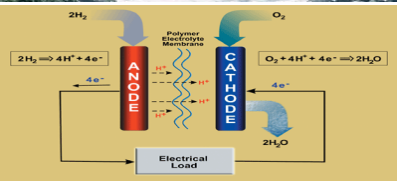
12- RECOMMENDATIONS; cont.

- **Need to target capacity building of private companies and industry associations which have strong potentials to become active players in CDM.**
- **Need to collaborate and exchange information with other developing countries in Africa & MENA region.**
 - **Collaboration can be in the form of regional carbon forums, workshops to share best practices among DNAs and national CDM regulations; activities to support the establishment and development of regional DOEs; support for regional research centers which will develop baseline and monitoring methodologies appropriate for the country; activities which will facilitate the regional capacity to trade carbon credits (e.g. spot markets for CERs).**



12- RECOMMENDATIONS; cont.

- **To comply with KOYOTO PROTOCOL , LIBYA should establish its NATIONAL SUSTAINABLE DEVELOPMENT STRATEGY.**
- **Designing of a designated national authority (DNA)**
- **support capacity-building, including institutional capacity, for preventive measures, planning, preparedness and management of disasters relating to climate change by issuing the National Report regarding the KOYOTO PROTOCOL commitments.**



Thank you

for inviting me and giving me an opportunity to share with you these conceptual ideas.

Thank you

for your attention and patience. please, Send your comments to:

najmideen@yahoo.com