



# Lebanon's First Biennial Update Report to the UNFCCC

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**Facilitative Sharing of Views  
COP 22 – Marrakesh, Morocco**

1.

# National circumstances



# A quick overview



## Population

5,102,830 in 2011 including foreign workers and Palestinian refugees

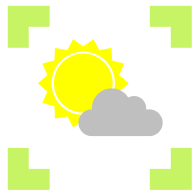


## Surface area

10,452 km<sup>2</sup>

## Population density

488 person/km<sup>2</sup>



## Mediterranean-type climate

Hot and dry summers (June to Sep)  
Cool and rainy winters (Dec to March)  
The average annual temperature: 15°C



## Economic profile

GDP USD 47.1 Billion in 2015

The largest sectors are commercial trade (16%), and real estate (14%).

The sector with the lowest share is agriculture, forestry and fishing sector (4%)

# Energy



**1** Power utility: Electricite du Liban

**7** Thermal power plants. 3 operate on HFO, 4 on GDO

**2** of the 7 plants use CCGT

**3.5–4.5%** of electricity generated through hydropower

**2,670** MW available capacity

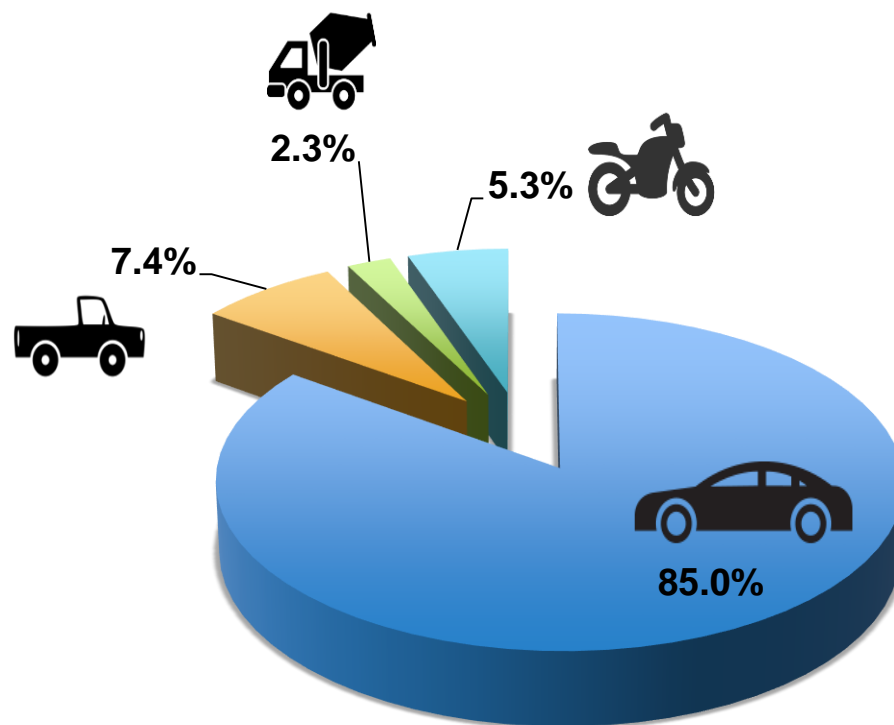
**8,715** GWh difference between supply and demand

**33–37%** Self generation

# Transport



- 1.58 million registered vehicles
- 71% older than 10 years
- Mass transport consists of public and private buses, minivans and taxis, all operating on an ad-hoc basis without coordination, resulting in poor occupancy rates



- Passenger cars
- Light duty vehicles
- Heavy duty vehicles
- Motorcycles

# Sectors overview



## Industry

7.2% of GDP

Main productions: Food products and beverages, cement and lime manufacturing



## Agriculture

Livestock dominated by dairy cattle and poultry

Main productions: fruits, vegetables, cereals

Overuse of fertilizers



## Forestry

Forests : 13% of surface area

Other wooded lands : 10%

Threats: Quarries, urbanization, fires



## Waste and wastewater

55% of waste disposed in 3 landfills – the rest in open dumpsites

Wastewater mostly discharged in surface water without prior treatment. Septic tanks still widely adopted in rural areas

# 2.

## National greenhouse gas inventory



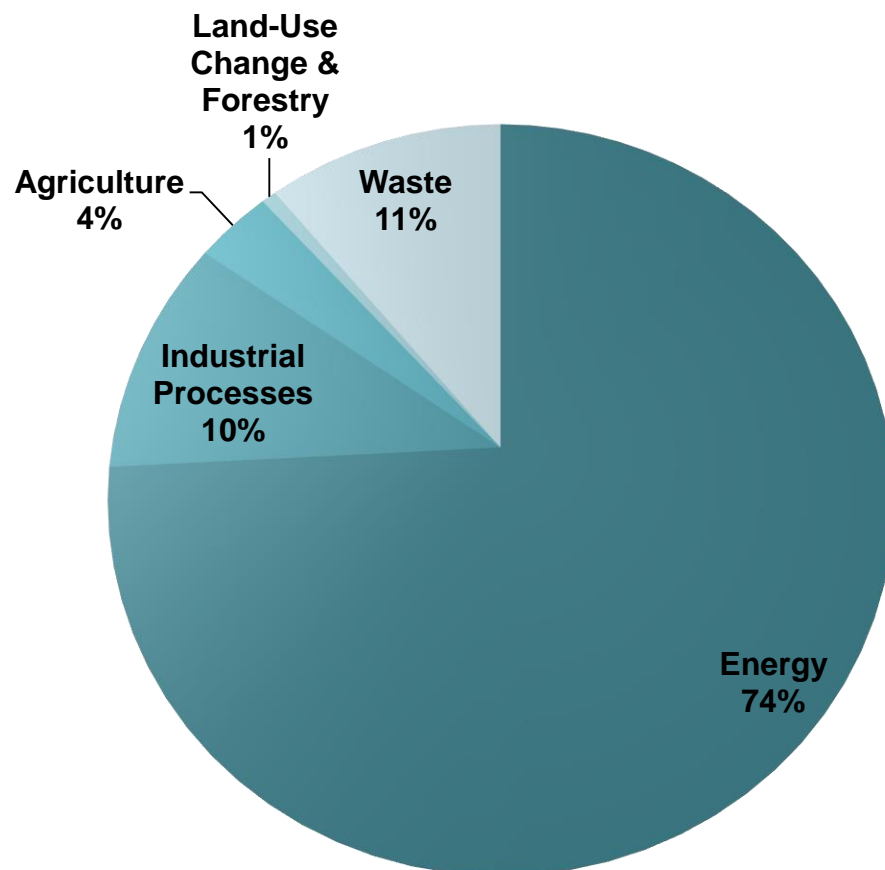
# Results of GHG inventory

■ Total emissions in 2011: 24,652 Gg CO<sub>2</sub> eq.

■ Removals from LULUCF: 3,369.85 Gg CO<sub>2</sub>

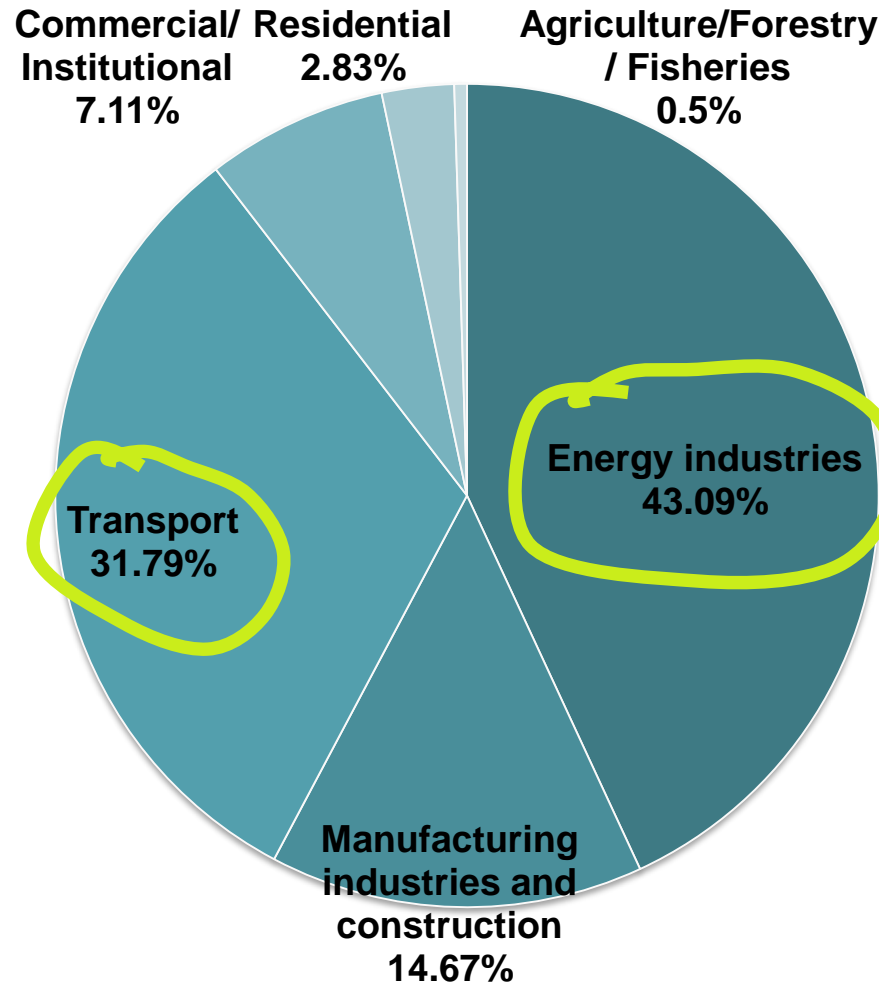


■ Net emissions: 21,283 Gg CO<sub>2</sub> eq.





# Breakdown of emissions from energy



# Key category analysis 2011

Sector	Source categories	Greenhouse gas	Emission estimate (Gg CO <sub>2</sub> eq)	Level assessment (%)	Cumulative total (%)
Energy	CO <sub>2</sub> mobile combustion: road vehicles	CO <sub>2</sub>	5,635.0	33.9%	33.9%
Energy	CO <sub>2</sub> emissions from manufacturing industries and construction	CO <sub>2</sub>	2,675.1	16.1%	50.0%
Industrial processes	CO <sub>2</sub> emissions from cement production	CO <sub>2</sub>	2,577.6	15.5%	65.5%
Waste	CH <sub>4</sub> emissions from solid waste disposal sites	CH <sub>4</sub>	2,194.4	13.2%	78.7%
Energy	Other sectors: commercial CO <sub>2</sub>	CO <sub>2</sub>	1,293.7	7.8%	86.5%
Energy	Other sectors: residential CO <sub>2</sub>	CO <sub>2</sub>	513.7	3.1%	89.6%
Agriculture	N <sub>2</sub> O (direct and indirect) emissions from agricultural soils	N <sub>2</sub> O	479.8	2.9%	92.5%
Waste	CH <sub>4</sub> emissions from wastewater handling	CH <sub>4</sub>	400.5	2.4%	94.9%

# Time series



BUR does not present a time series analysis.

What are the steps taken to ensure a consistent time series for TNC and BUR?  
Any good practices to share?

*-EU*

# F-gases



BUR does not report F-gases emissions.

What are the constraints in measuring consumption of, and emissions from, HFCs, PFCs and SF6? Any capacity-building needs?

*- New Zealand*

What are the steps taken to include F-gases in BUR2?

*- EU*

# 3.

## Mitigation policies and actions



# Summary of mitigation activities for the period 2005-2012

Sector	Activity	Estimated emission reduction (t CO <sub>2</sub> eq.)	Yearly emission reduction (t CO <sub>2</sub> eq./year)
Energy	Installation of PV	5,046 for 2010 - 2012	1,682
Energy	Installation of Solar Water Heaters (SWH)	7,960 for t2005-2012	995
Energy	Light Emitting Diode (LED) street lighting	7,434 for 2012	7,434
Energy	Mircowind and microwind-PV	36 for 2010-2012	12
Energy	Replacement of incandescent lamps with CFL	90,036 per year for 2012	90,036
Energy	Energy saving measures implemented -self-financed by the private sector	152,200 for 2005-2012	19,025
Agriculture	Applying Conservation Agriculture (CA)	-	-
Agriculture	Improvement of cattle production	577.5 for 2009-2011	192.5
Agriculture	Recovery and rehabilitation of the dairy sector in Bekaa and Hermel	12,389 for 2009-2012	3,097.25
Agriculture	Composting of dairy manure	3,060 for 2010-2012	1,020
Agriculture	Organic agriculture	-	-
LULUCF	Reforestation activities	19,640 for 2009-2012	4,910
LULUCF	Forest fire management	786,450 for 2005-2012	98,306.25
<b>Total known GHG emissions reduced during 2005-2012</b>		<b>1,084,829</b>	
<b>Yearly GHG emissions expected from sustaining the implementation of these activities</b>			<b>226,710</b>

## Tracking mitigation progress



- ▣ Plans to improve the quantification of emission reductions in the future? Specific challenges?

*- USA*

- ▣ Further information on the MRV system to enhance the assessment of mitigation activities?

*- Japan*

# 4.

## Institutional arrangements and MRV system





# Preparation of BUR

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- ▣ The Ministry of Environment is the institution responsible for the preparation of the BUR through the GEF enabling activity
- ▣ Sections of the preparation of the GHG inventory and mitigation actions were outsourced to local consultants
- ▣ The process is highly participative, involving stakeholders in data collection and methodology and results validation.
- ▣ The GHG inventory was reviewed by an external reviewer and amendments were introduced to improve consistency, transparency, accuracy, completeness and comparability of the results.

# Data collection

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## Challenges:

- Lack of institutional memory from compiling previous inventories,
- Difficulties in sharing data between agencies,
- Greater involvement from the private sector (where an important part of the data is available)

## Introducing new incentives, teaming up with the private sector:

- Cooperation with the Ministry of Industry
- Cooperation with the Ministry of Finance
- Environmental compliance decree
- Ministerial Decision 99/1- Carbon footprint reporting from private sector

# MRV system

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## MRV of emissions:

- Improve the basis of information.
- Identify areas and quantify potential for further mitigation action.
- Clearly define roles and institutional responsibilities to ensure the smooth flow and standardization of information to all entities producing, reporting and verifying GHG estimates.

## MRV of actions:

- Account and assess the overall effectiveness of mitigation actions (i.e. emission reductions and progress to achieving objectives and co-benefits).
- Identify challenges and opportunities.
- Coordinate individual mitigation activities of bottom-up actions (private sector) and policies and top-down goals.
- Develop and assign indicators for each activity, whether it seeks to measure GHG reductions or other benefits.

## MRV of finance:

- Provide a clearer overview of technology transfer, capacity building, financial flows, trends, sources, and purposes of international and domestic climate support.
  - Assess impacts of the provided support and allocated funds.
  - Calculate mitigation costs based on proven or credible methods and using the best available data.
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## Preparation of BUR



MoE is the main compiler and focal point, although agriculture sector prepared by a local consultant. What are the challenges and possible solution on effective data sharing between institutions?

*- EU*

# Data collection



What are the challenges and lessons learnt from decision 99/1?

*- Japan*

How is other data collected from ex. residential, transport, agriculture, etc.?

Any good practices to be shared in data collection?

*- EU*

# Data collection



What are the main challenges that you face on the gathering information process? And how do you address those challenges?

*-Peru*

What have you done to overcome the issue of lack of institutional memory?

*- USA*

# Proposed MRV unit



Any update on the setup on MRV system?

- *EU*

# Support needed



Do you use any methodology to define support need for the preparation of your BUR?

*-Peru*



# 5.

## Gaps and constraints and related needs and support received



# Gaps and Constraints

## Administrative constraints

- Time lapse between the submission of the project proposal and the receipt of funds to launch the preparation of the BUR
- Lack of clarity on the type of information to be presented in the BUR, namely concerning mitigation actions

## Technical constraints

- Unavailability of data
- Lack of disaggregated data
- Inconsistency of data between different official sources
- Underdeveloped sectoral databases
- Deficiencies in technical expertise
- Discontinuity in data series
- Difficulty in estimating uncertainty for activity data and emission factors
- Inaccuracy of emission factors to reflect national circumstances
- Difficulty in estimating emission reductions induced by the implementation of mitigation activities

# Gaps and Constraints

## Institutional constraints

- Lack of institutional arrangements for data monitoring and reporting
- Scattering of data throughout national agencies
- Absence of willingness to share data between public/private institutions
- Time delays in accessing and compiling data
- Overlapping mandates of different agencies
- Lack of consistency in assigning contact persons in governmental institutions
- Lack of sufficient documentation on data sources from previous national communications reports
- Lack of cooperation between different research bodies
- Lack of knowledge of the main institutions about Lebanon's commitments under the UNFCCC

# BUR guidelines



Any areas of guidelines not sufficiently clear?

Experiences learned with the application of BUR guidelines

Areas in the guidelines to improve?

Capacity building needs?

- *EU*

# 6.

## Other matters



# Waste



Waste represents 11% of Lebanon GHG emissions. Describe if and how circular economy is fostered in Lebanon, in order to reduce waste production?

- *France*

# Technology use



In the energy sector and industrial processes, how is the development of technologies accompanied in order to limit GHG emissions?

*- France*

# Thanks!



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