

Energy Efficiency Policies for the SEMED/Arab Region

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National Energy Efficiency Strategy in Industrial Sector in Tunisia : Policy, Instruments & Achievements

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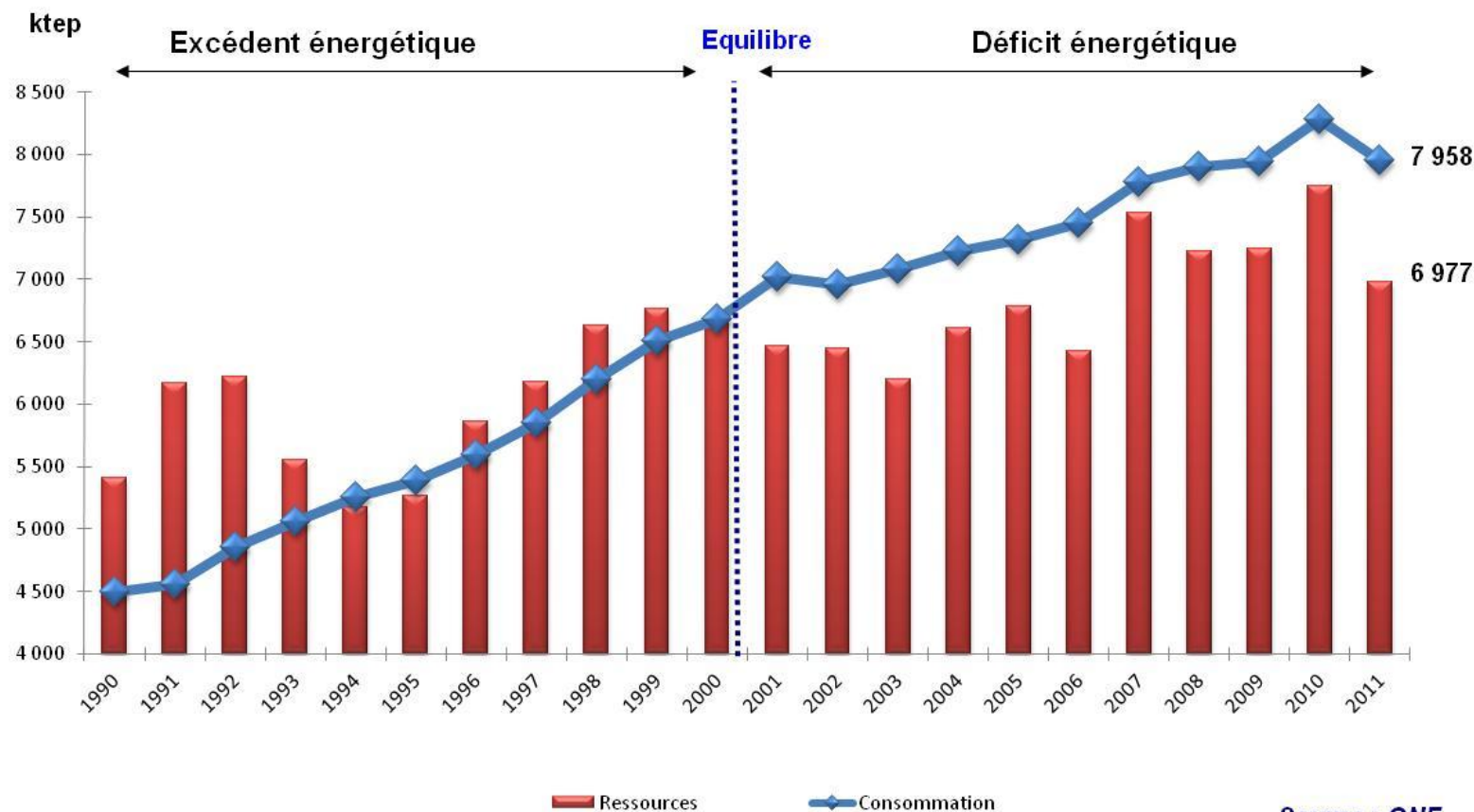


Presentation Content

- ❖ Energy context in Tunisia
- ❖ Industrial Energy characterisation in Tunisia
- ❖ Energy policy and public tools for the development of EE in industrial sector in Tunisia
- ❖ The achievement of EE programme in industrial sector in Tunisia
- ❖ Conclusion



Ressources et Consommation d'énergie primaire



Source : ONE



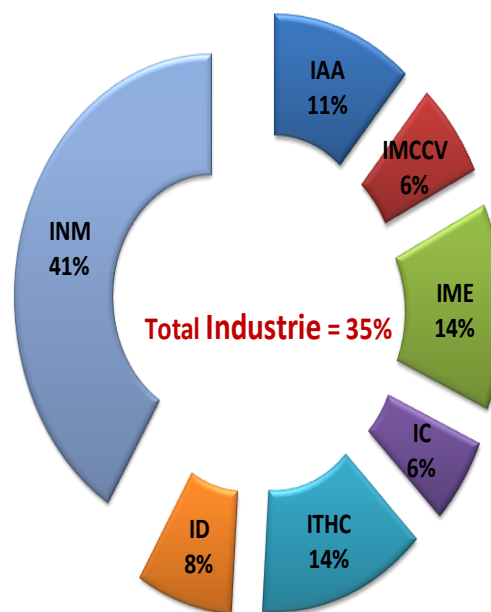
➤ **6000** Companies

➤ **35%** du GDP

➤ **80%** Exports of goods and services

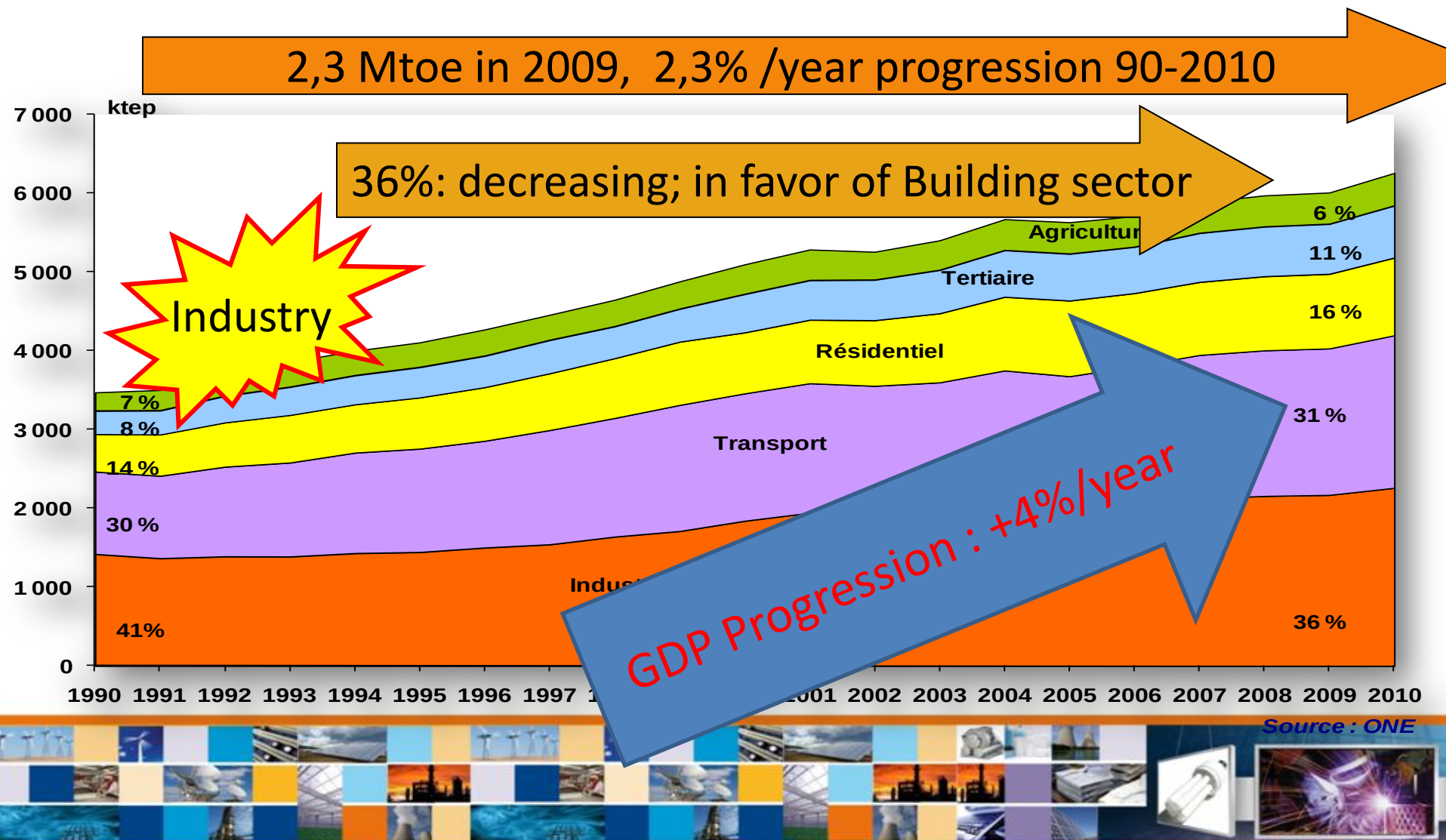
➤ **500** thousand of direct jobs

Structure de la valeur ajoutée de l'industrie



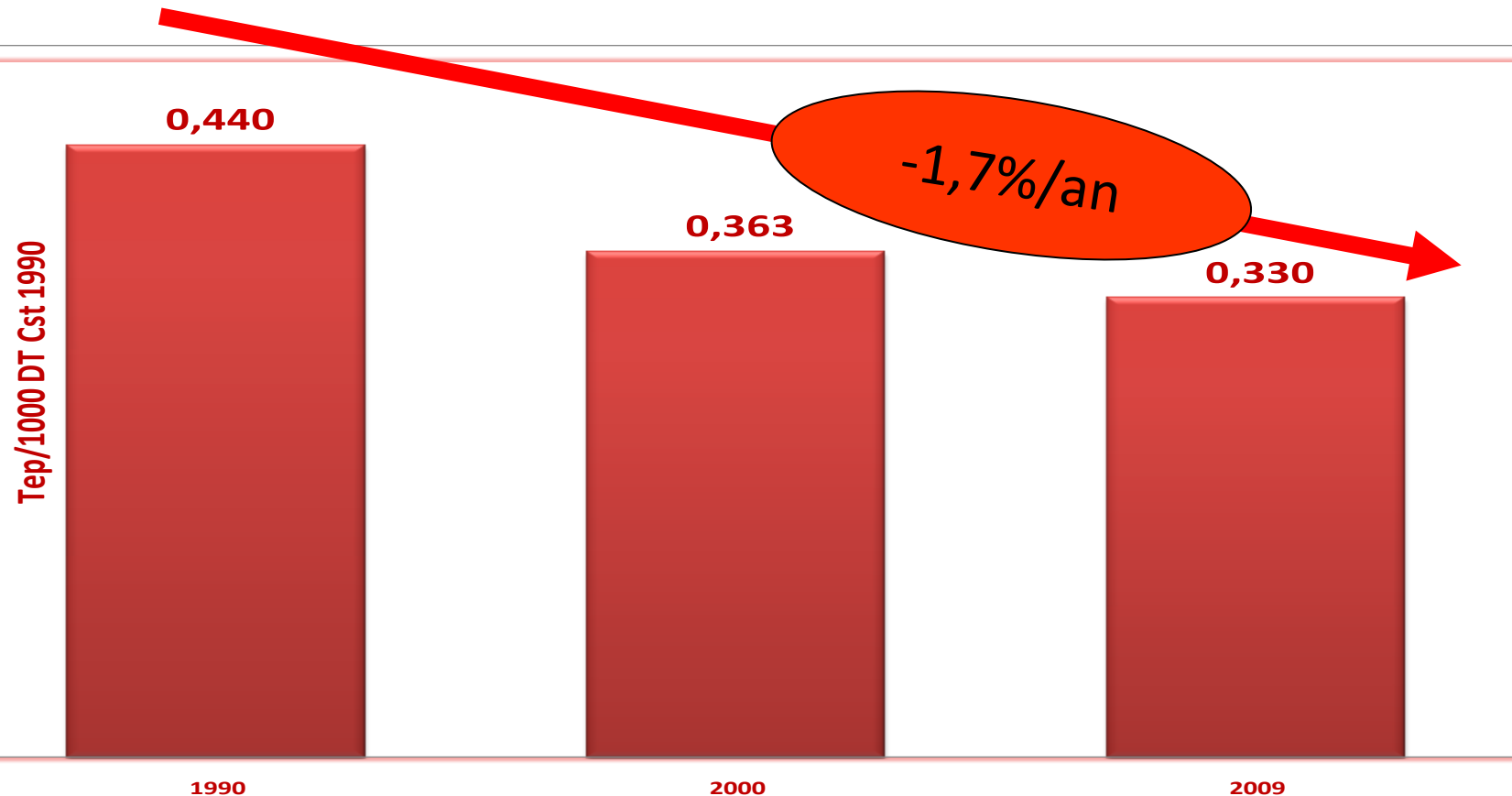
Industrial Energy caractérisation in Tunisia

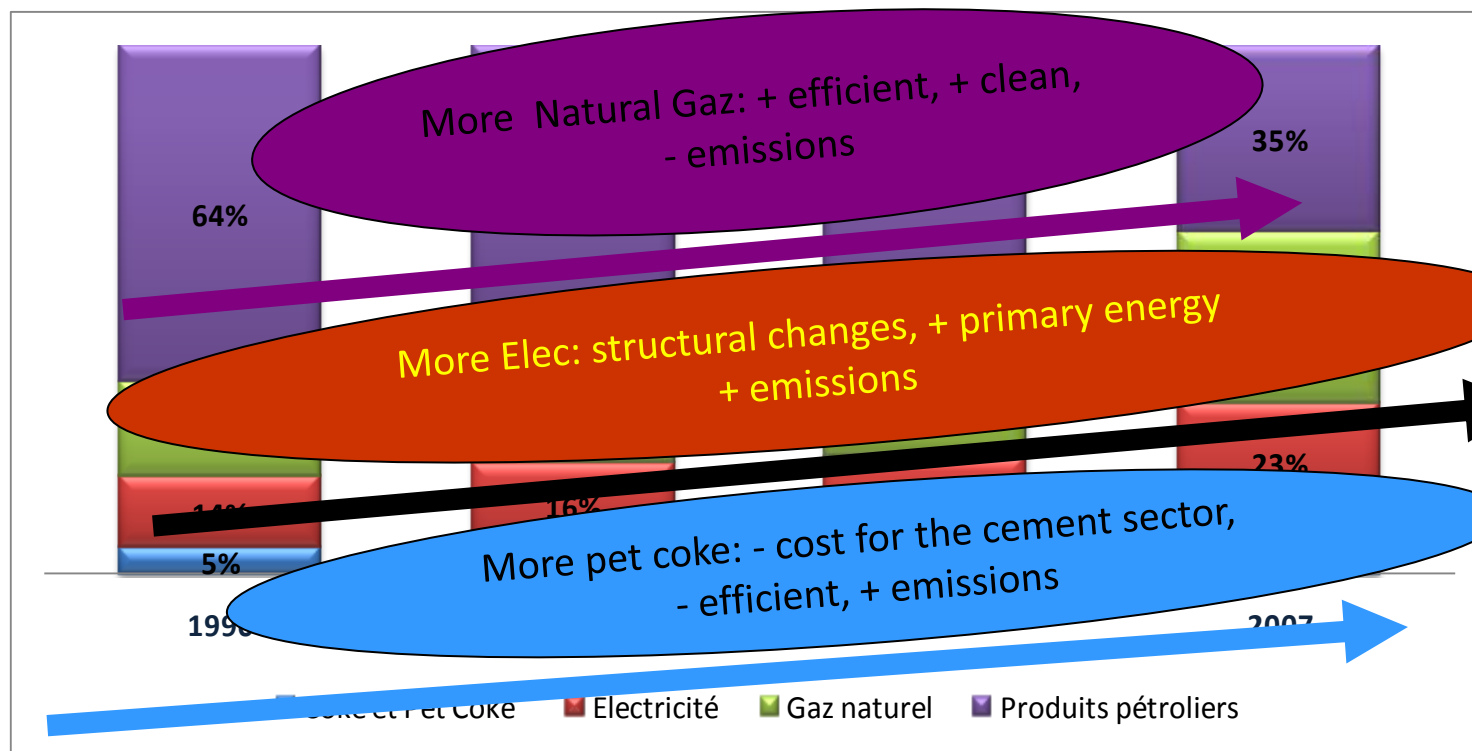
Weight of Energy



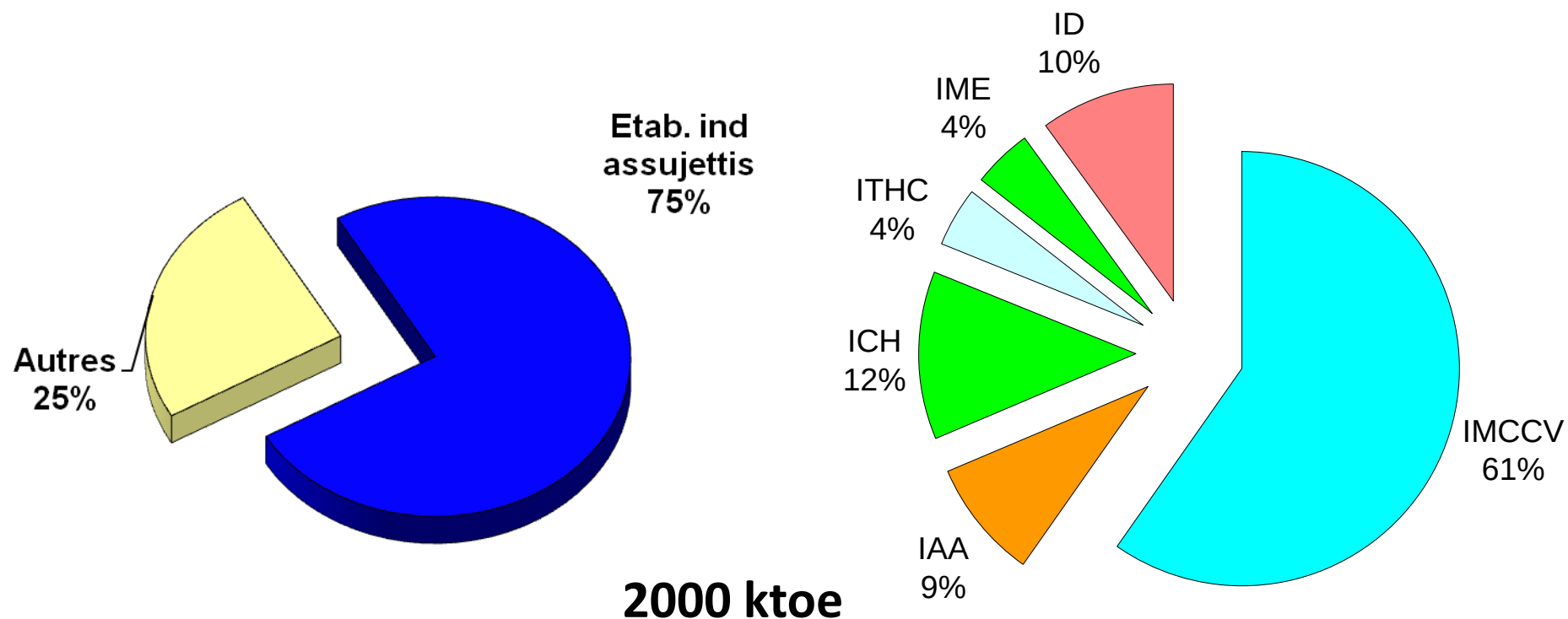
Industrial Energy characterisation in Tunisia

Final Energy Intensity evolution





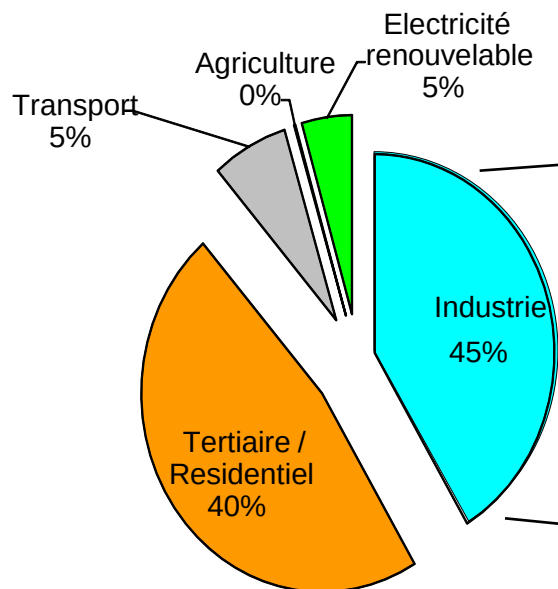
Energy Consumption Structure in the Industrial Sector



Industrial Energy Characterisation in Tunisia

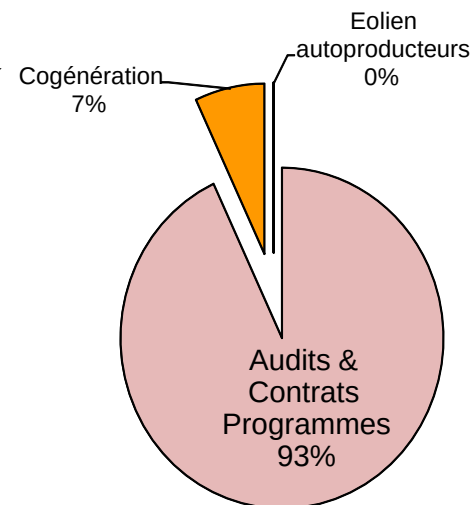
Energy Savings achieved: 2005-2011

Energy Savings achieved over the period 2005-2011



3500 ktoe

Industrial Energy Savings achieved over the period 2005-2011



1600 ktoe



Energy Efficiency Action Plan 2012-2016

Economies (ktep)	2013	2014	2015	2016	TOTAL
<i>Industrie</i>	170,3	303,1	448,1	599,2	1520,7
<i>Résidentiel et Tertiaire</i>	58,9	133,5	226,1	308,8	727,3
<i>Transport</i>	93,2	129,4	298,1	336,9	857,6
<i>Actions Agriculture et pêche</i>	0,3	1,3	2,3	2,6	6,5
Total EE	322,7	567,3	974,6	1 247,5	3 112,2

50 %

Energy Saving 3 Mtoe



State policy and public tools for EE enforcement in the industrial sector

Technical Support

incentive Instruments

- Subventions FNME
- Avantages fiscaux
- Outils de financement
- ESE

Regulatory instruments

- Mandatory Periodic Energy Audit
- Mandatory Energy audit for new project

Institutionnel instrument

- ANME (Unité de l'Efficacité Energétique dans l'Industrie)
- National Fund for Energy Conservation
- Programme National de Mise à Niveau



State policy and public tools for EE in the industrial sector

Mandatory measures



■ Mandatory periodic Energy audits

- ✦ Industrial companies consuming more than **800 toe / year**
- ✦ Actual target **320** companies

■ Mandatory Energy audits for new projects

- ✦ Industrial new projects consuming more than **800 toe /year**: ANME permission
- ✦ Industrial new projects consuming more than **7000 toe /year** : Autorisation from the minister in charge of energy





State policy and public tools for EE in the industrial sector

Incentives Measures



■ Subsidies for energy audits:

- ✦ **70%** of the cost of the audit with a limit of **30.000 DT**

■ Subsidies for EE investment:

- ✦ Immatériel Investissement : **70%** of the cost with a limit of **70.000 DT**
- ✦ Matériel Investissement : **20%** of the cost with a limit depending on the energy consumption
 - less than 4000 toe: 100.000 DT
 - between 4000 and 7000 toe: 200.000 DT
 - more than 7000 toe: 250.000 DT





State policy and public tools for EE in the industrial sector

Incentives Measures



■ Specific Framework for the promotion of cogeneration

- ✦ **20%** subsidy for cogeneration investment with a maximum of **500.000 dinars** per project.
- ✦ Obligation for the utility company STEG to buy the excess of electricity produced by cogeneration plant.
- ✦ Third part access to STEG transmission Network.
- ✦ An incentive purchase price for the excess of electricity sold to the grid



- Prix Jour : $0,2401 \times \text{Prix Gaz/tep} + 16$ (millimes)
- Prix Pointe : $0,3110 \times \text{Prix Gaz/tep} + 60$ (millimes)
- Prix Soir : $0,3039 \times \text{Prix Gaz/tep} + 40$ (millimes)
- Prix Nuit : $0,2179 \times \text{Prix Gaz/tep}$ (millimes)





State policy and public tools for EE in the industrial sector

Accompanying measures



■ Creation of **4 Task forces** chaired by ANME Key in the **implementation** of the **4ECP**

✦ **Task force for large industrial energy users:**

To assist large industrial users in their energy conservation efforts

✦ **Task force cogeneration:**

To support the establishment of the required legal framework to achieve the cogeneration objectives

To work with industrial companies to assist in the development and implementation of projects

✦ **Task force on natural gas:**

To encourage the expansion of gas use in industry

✦ **Task force CDM:**

To support industrial companies in the preparation of their CDM projects





State policy and public tools for EE in the industrial sector

Accompanying measures



- Sensitizing and assisting industrial companies on identifying and implementing EE actions plan.
- Accompanying industrial companies on the verification, evaluation and monitoring of the implemented EE projects.
- Assisting and accompanying the industrial companies on implementing **Energy Management System**.

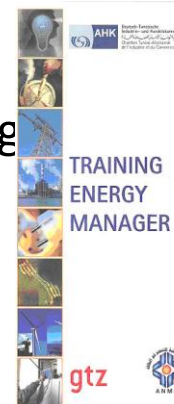


Creation of an Energy Management Unit.

Assistance on the implementation of Energy performance indicators.

Training Energy Managers on the EE issues

- Sensitizing commercial banks to finance EE projects in industrial companies.





State policy and public tools for EE in the industrial sector



Mobilizing credit lines dedicated for financing EE programs

- **Credit line World Bank: 40 MUS\$**

- A long term loan from the world bank with the guarantee from the Government of Tunisia
- 2 banks partners: **Amen Bank, Banque de l'Habitat**
- Cogénération and Energy Efficiency in industries

- **Credit Line Environment AFD: 40 M€**

- A loan from AFD, bonifiée par l'UE
- 3 banks partners: **BIAT, UBCI, BT**
- Cogénération, Energy Efficiency and Renewable Energies





State policy and public tools for EE in the industrial sector

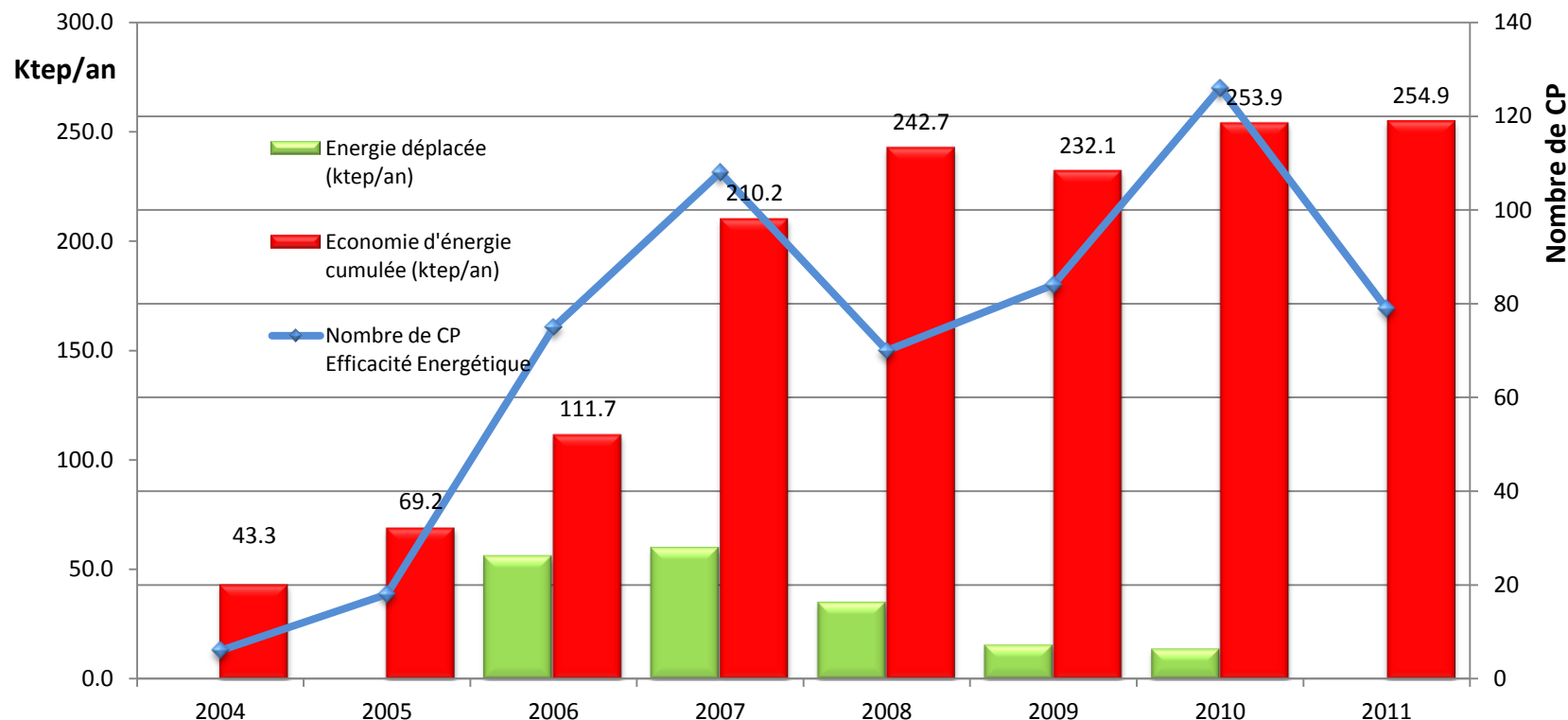
Mobilizing credit lines dedicated for financing EE programs



• Technical and financial assistance to project developers

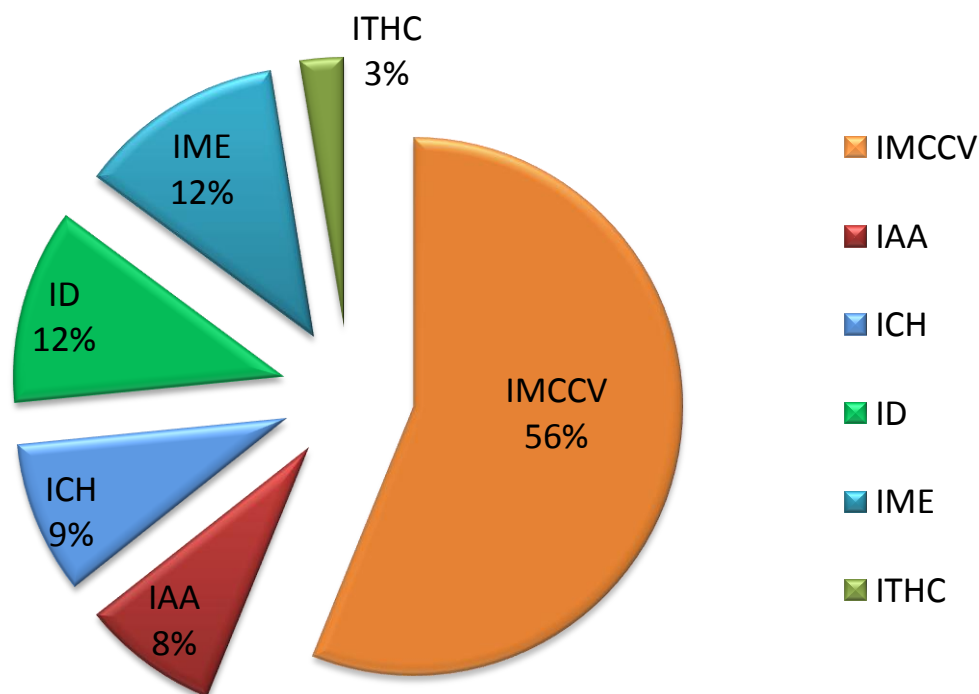
- The **ANME** in the center of the dispositif
- Providing technical assistance to the commercial banks in the area of EE
- Providing support to project developers to assist in the preparatory studies and business development assistance.

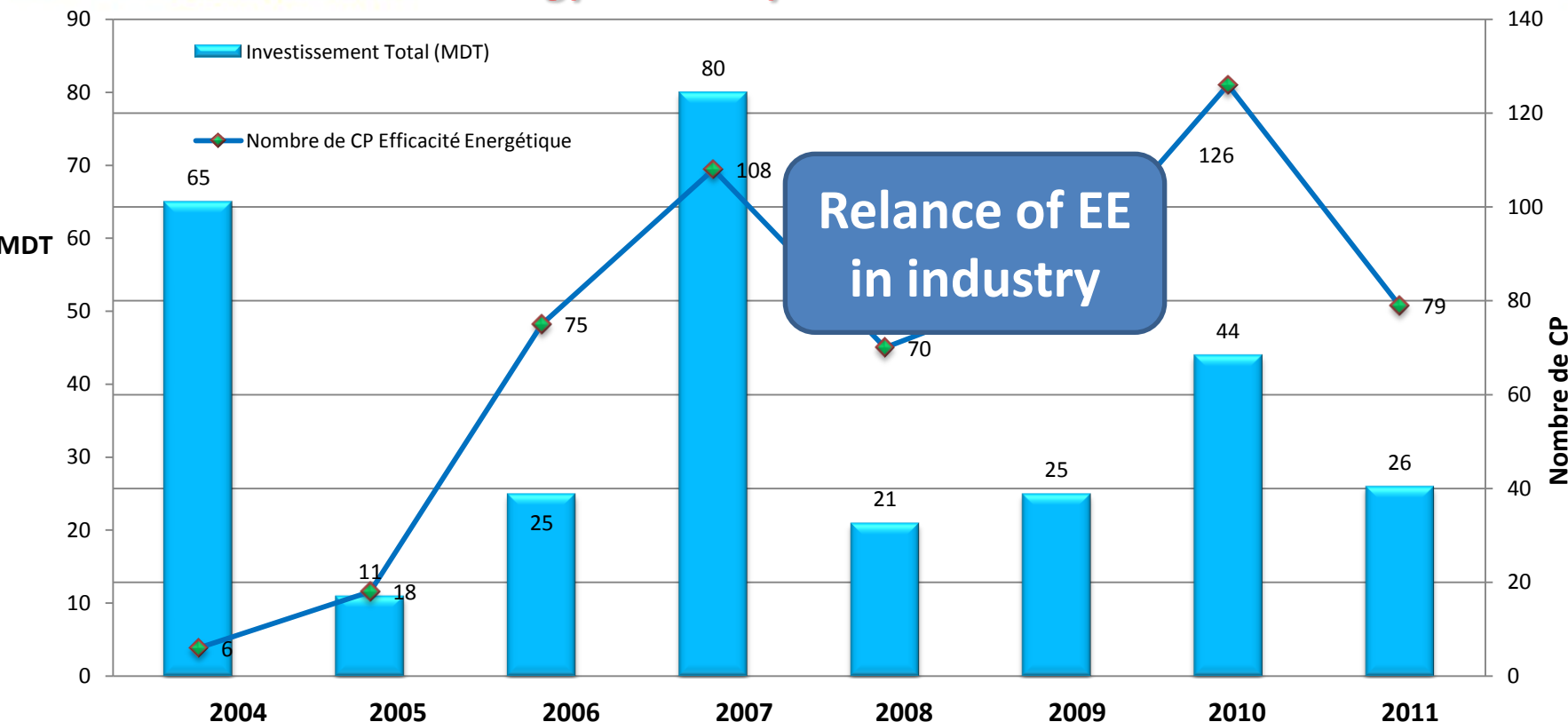




Cumulative Energy Savings of 1 400 Ktoe
4 MTCOE Emissions Avoided



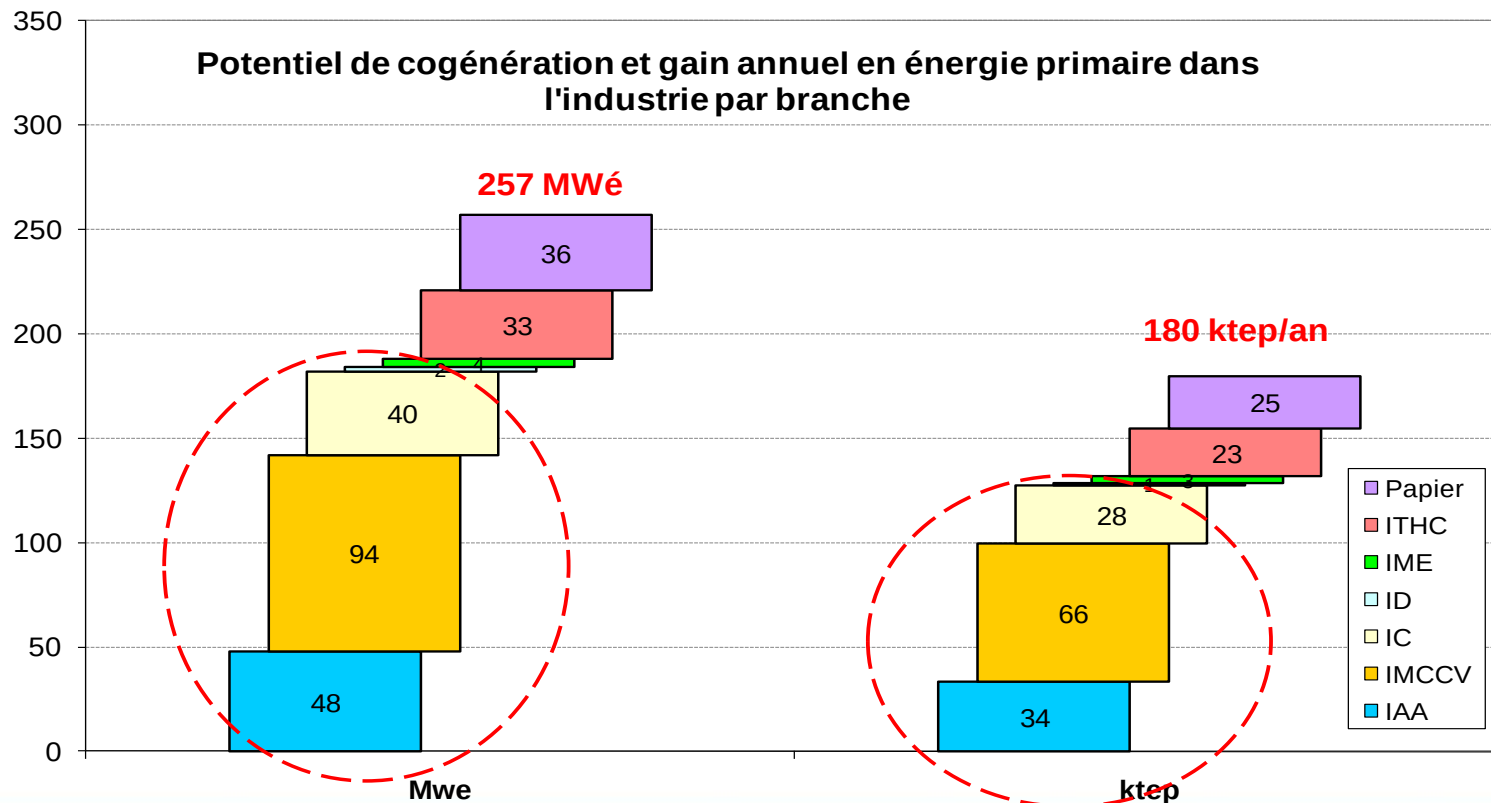




Total EE Investment = 300 MUS\$
Average pay back period~ 2 years



Potentiel for CHP in Industry: 260 MW electrical



The Programme of Promotion of Cogeneration

Program objective : Installation of 110 MW in 2014

Pipeline cogeneration installations targeted in 2014



Nombre d'installations	Situation	Capacité (MW)	Investissement consenti (MDT)	Economies prévues (tep/an)
8	Installations opérationnelles	37	35	25 450
8	Installations imminentes	20	36	80 % 26 000
9	Installations engagées	33	59	
27	Installations en cours d'études de faisabilité	92	163	73 600
52	TOTAL	181	292	141 050

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A need for changing scale in EE and Cogeneration investment

Better mobilizing the CHP potential : regulatory framework, awareness of industries ...

- Explore new solutions for EE in the industry:
 - Measures focusing on Utilities, Process optimization,
 - Best available technologies ...
- Strengthen and improve the EE services for customers:
 - Coaching
 - Guarantee of results
 - Improve the effectiveness of energy savings: systematizing measuring and monitoring Protocols



- Establish an Energy Efficiency Information System for Industry (database of relevant indicators, benchmarking, etc. .
- **Promote the progressive integration of EE into the overall management system of companies (ISO 50001 standard)**
- Promote Public - Private partnership based on a "win-win" approach for both partners



A need for changing scale in EE investment

Success keys

- A good understanding of circumstances and issues
- A long term vision and policy
- A good and updated Energy Information System
- Strong positive signal from the public sector
- Specific financial mechanism for each targeted sectors
- **Real public-private partnership based on a win – win approach between stakeholders**



Energy Efficiency Program in Industrial Sector



Thank you very much for your attention



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