ENERGY MANAGEMENT ACTION NETWORK
FOR INDUSTRIAL EFFICIENCY
(EMAK)

Session 1 – Showcases Established in Brazil (EnMs and EC)

Established Public and Private Network / B+P EE

Gustavo Fontenele (MDIC)

São Paulo, November 21st 2018 (EMAK9)
Session 1 – Showcases Established in Brazil

1) Established Public and Private Network (remarks).

2) B+P EE.
1) Established Public and Private Network (remarks)
2) Brazil More Productive Energy Efficiency (B+P EE)

“Brasil Mais Produtivo Eficiência Energética (B+P EE)”
The industrial sector is responsible for more than a third of worldwide energy consumption (IEA, 2015) and for 34% of the total of the produced energy in Brazil (Energy Research Agency, 2015).

In discreet manufacturing companies, the costs related to energy consumption are from 6% to 8% of the total, and may reach 20% (HUIJBREGTS et al., 2010).
Methodology 140h

Identification of final use and electrical charge (8h)

Data collection and analyses (88h)

Implementation and Monitoring (40h)

Proposal of work plan (4h)

Areas of Action

- Tariff Analysis
- Lighting System
- Drive System
- Refrigeration and Thermal
- Compressed Air

Cost: R$ 21 mil / USD 5,600

USD 1,120 (Company Counterpart) + USD 4,480 (B+P)
R$ 4,2 mil (Contrapartida da Empresa) + R$ 16,8 mil (B+P)

* 1 USD = R$ 3.75
### PILOT IN 48 COMPANIES

#### SECTORS
- Red Ceramic (8)
- Metal-mechanic (8)
- Plastics (Transformed) Products (9)
- Textile (12)
- Food (5)
- Cosmetics (6)

#### INDICATORS
- Reduction of Energy Consumption (without investments): 26.43%
- Reduction of Consumption Reduction (without investments): R$ 47,92 mil
- Average Payback (R$ 21 mil / USD 5,600): 4.71 months

#### STATES
- BA, CE, ES, GO, MG, PB, SC, RS
## RESULTS PER SECTOR

<table>
<thead>
<tr>
<th>SECTORS</th>
<th>Total Energy Consumption Reduction (MWh/year) without investment</th>
<th>Total Energy Consumption Reduction (MWh/year) with investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOOD</td>
<td>182</td>
<td>251</td>
</tr>
<tr>
<td>CERAMIC</td>
<td>5,724</td>
<td>1,752</td>
</tr>
<tr>
<td>COSMETICS</td>
<td>280</td>
<td>223</td>
</tr>
<tr>
<td>METAL-MECHANIC</td>
<td>585</td>
<td>804</td>
</tr>
<tr>
<td>PLASTICS (TRANSFORMED) PRODUCTS</td>
<td>196</td>
<td>175.4</td>
</tr>
<tr>
<td>TEXTILE</td>
<td>5,137</td>
<td>3,217</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12,104</strong></td>
<td><strong>6,422.40</strong></td>
</tr>
</tbody>
</table>

*Energy Savings is equivalent to 6,724 houses (average per house 1.8 MWh/year)*
Case 1 – Sector: Metal-mechanic

Targets

Lighting Systems
Compressed Air Systems

Main Actions

Elimination of leakages in the compressed air network;
Change of the Power Energy Contract;
Deactivation of one of the three substations at the company (oversizing);

Results/Achievements

Reduction of 55.9% 170.23 MWh/a
Economy per year R$ 127,032,81 (USD 33,875,42)
Program Payback 2 months
Case 2 — Sector: Cosmetics

**Targets**

- Lighting Systems
- Drive Systems
- Refrigeration Systems
- Compressed Air Systems

**Main Actions**

- Deactivation of 1 power generator at peak hour;
- Change on the compressors operational systems;
- Change on the chiller operational system (water cooler for the productive process);

**Results/Achievements**

- Reduction of 65.4% 79.43 MWh/year
- Economy per year R$ 21,035,00 (USD 5,609.33)
- Program Payback 12 months
## 300 companies
Beginning of the consultancy on September, 2018

### CNAEs PRIORITIZED

<table>
<thead>
<tr>
<th>Foods and Beverages</th>
<th>Textile</th>
<th>Plastic (Transformed) Products</th>
<th>Red Ceramic</th>
<th>Cosmetics</th>
<th>Metal-mechanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>31</td>
<td>58</td>
<td>60</td>
<td>18</td>
<td>53</td>
</tr>
</tbody>
</table>

[Image of PROCEL logo]
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