



Effective Corporate Energy and GHG Emissions Management

Moscow, 22 October 2010

Vladimir Dyachkov

Energy-Carbon Management

What is it?

ENERGY-CARBON MANAGEMENT is a system of principles, methods and forms of corporate management with a view to reducing greenhouse gas emissions through reduction in energy consumption

Why do it?

Those products that are manufactured by companies which fail to monitor their greenhouse gas emissions and which carbon intensity falls short of international standards are now facing increasingly more barriers in the international markets.

Such barriers can be either imposing of custom duties or cancellation of subsidies, tax exemptions and other privileges for manufacturers and consumers of products, fuel and energy with a high level of per unit GHG emissions.

Carbon intensity of Russian products is three to four times higher than in EU countries

Generally, the biggest contribution to a product's carbon footprint is consumption of energy resources. In this case it does not matter if the company operates its own energy source or purchases energy from a third party.

What does it take?

1. Objectively estimate energy consumption efficiency and GHG emissions reduction potential.
2. Develop a plan of administrative and technical actions towards energy saving
3. Elaborate an energy-carbon (climate) strategy of company development. Pursue this strategy.

Energy-Carbon Strategy

is a comprehensive document which specifies:

- ✓ **targets**
- ✓ **priorities**
- ✓ **tasks**
- ✓ **methods and solutions**
- ✓ **mechanisms of control and management**

CJSC “Sawmill 25”, Arkhangelsk

2002 – elaboration of an energy system development plan for the company with allowance for the carbon component;

2005 – construction of a bark and wood wastes (BWW) fired boiler house at Tsiglomen Production Site, and the sawmill ceased to supply energy from the municipal heavy fuel oil fired boiler house (joint implementation project);

2007-2008 – construction of a BWW-fired CHPP at Maimaksa Production Site (joint implementation project);

2007-2008 – construction of a wood pellet production plant (joint implementation project).

CJSC “Sawmill 25”, Arkhangelsk

Results (Energy)

- ✓ avoidance of fossil fuel consumption and complete switch over to in-house BWW for heat and power generation
- ✓ Production of high-quality biofuel

CJSC “Sawmill 25”, Arkhangelsk

Results (Carbon)

- ✓ Sale of early emission reductions generated in 2006-2007 in the amount of 27 000 tonnes of CO₂e
- ✓ The joint implementation projects involving construction of biofuel energy sources and a pellet production plant successfully passed through determination by independent auditors and were submitted for approval to Sberbank’s JI tender

The overall estimated amount of emission reductions in 2008-2012 is 317 000 tonnes of CO₂e

OJSC “Arkhangelsk PPM”

2000

- **Reconstruction of utilizing boiler No.2 in THPP-3 and switching to fluidized bed combustion of BWW without adding any heavy fuel oil**
- **Installation of a bark crusher and a bark press in Wood Preparation Shop-3**

OJSC “Arkhangelsk PPM”

2003- 2005

- **Replacement of boiler No.1 in THPP-3 with a new boiler using the technology of fluidized bed combustion of BWW and waste water sludge (WWS) without adding any heavy fuel oil**
- **Installation of a new facility for BWW and WWS handling, preparation, storage and feeding for combustion to the utilizing boilers of THPP-3**

OJSC “Arkhangelsk PPM”

2003

- Taking of a GHG emissions inventory for the period of 1990-2002 (on an annual basis)
- Assuming voluntary commitment to limit GHG emissions at the level of 2.6 million tonnes of CO₂e/year

2004

- Development of key provisions and principles of energy-carbon (climate) strategy
- Development of GHG inventory software

OJSC “Arkhangelsk PPM”

Results (Energy)

Increase in proportion of biofuel in the company’s fuel mix from 28% (1990) to 41% (2009) due to:

- ✓ Increase in efficiency of bark and wood waste combustion
- ✓ Increase in volumes of bark and wood waste combustion
- ✓ Combustion of waste water sludge

OJSC “Arkhangelsk PPM”

Results (Carbon)

- ✓ Sale of early emission reductions generated in 2001-2007 in the amount of 799 thousand tonnes of CO₂e
- ✓ The company all by itself takes annual inventory of GHG emissions
- ✓ The JI biomass residue utilization project successfully passed through determination by an independent auditor and was submitted for approval to Sberbank’s JI tender. The total amount of projected emission reductions in 2008-2012 amounts to 1.0 million tonnes of CO₂e

Key points of APPM's energy-carbon (climate) strategy

STRATEGIC GOAL: reduction in GHG emissions per tonne of cooked pulp down to 2.6 tCO₂e/t on average for the period from 2008 to 2012.

PRIORITIES:

- economic;
- environmental;
- social;
- commercial;
- technological.

Key points of APPM's energy-carbon (climate) strategy

STRATEGIC TARGETS:

- 1. Reduction in energy intensity of production**
- 2. Increase in fuel combustion efficiency**
- 3. Increase in the proportion of biofuel in the pulp mill's fuel mix**



Thank you for your attention!

v.dyachkov@ccgs.ru

www.ccgs.ru