

**SOCIO-ECONOMIC BENEFITS OF  
METEOROLOGICAL AND HYDROLOGICAL SERVICES**

**INVENTORY OF DECISION SUPPORT TOOLS**

DRAFT INVENTORY FRAMEWORK

ITEM	DESCRIPTION
Sector	Energy
Sub-sector	Offer/Demand management system
Tool Name	GEODE
Tool Description	GEODE is a tool to optimise the use of power plants to meet the demand in France from next month to the next five years.
Weather, Climate or Water inputs	Temperature
Specific weather, climate, water data required	T2m and hydraulicity (capacity of hydropower production, derived from river flows) historical data
Spatial resolution	Local data (over some meteorological stations and river dams)
Temporal resolution	hourly more or less
Delivery methodology	Historical data : time series must be as long as possible (presently 120 years for temperature, and 53 years for hydraulicity)
Frequency of data requirement	Once
Other	GEODE is an EDF tool
Detailed Tool Description	GEODE is based on several components (an energy demand forecasting tool – PREMIS, an hydrological module, an optimiser and a simulator ...). It simulates many scenarios of the supply-demand equilibrium under several constraints, in order to maximise global earnings. It produces physical and financial risks indicators ...
Spatial resolution	France
Temporal resolution	Up to 5 years
Delivery methodology	Planning of individual plants, GEODE provides multiple scenarios in output, that help to take the final decision (both for the plants planning and to take positions on energy markets)
Frequency of provision	Routinely once a week, higher frequency when necessary
Other	
Benefits of tool application	GEODE allows to optimise a very complex system which is made of different production means (nuclear, hydro, coal, fuel, ... with very different physical constraints). It includes a market module that takes into account the opportunities to buy/sell energy on the European market.
Possible future advances	Currently GEODE would be improved if more climate scenarios were available. Temperature scenarios generators based on statistical techniques could help in multiplying the number of scenarios to better assess the extreme cases

	(distribution tails).
Comments	
URL	
Others	