



Local and sustainable approach of energy and typology of renewable energy

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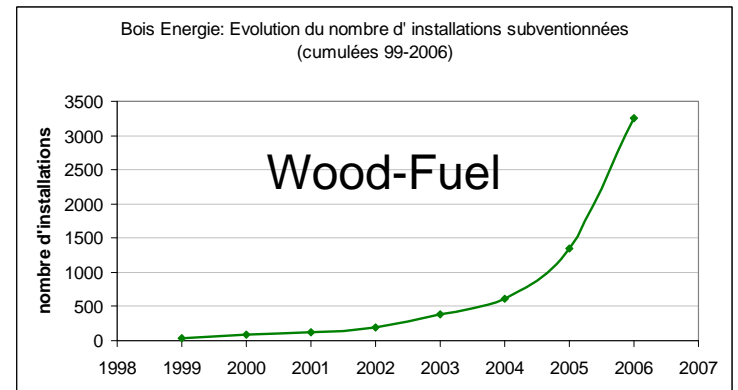
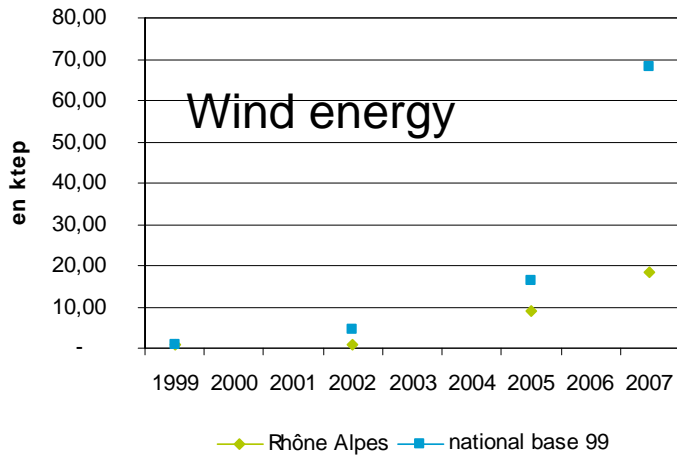
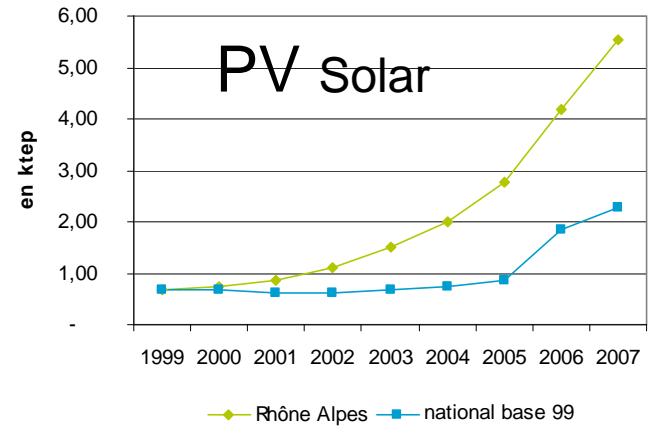
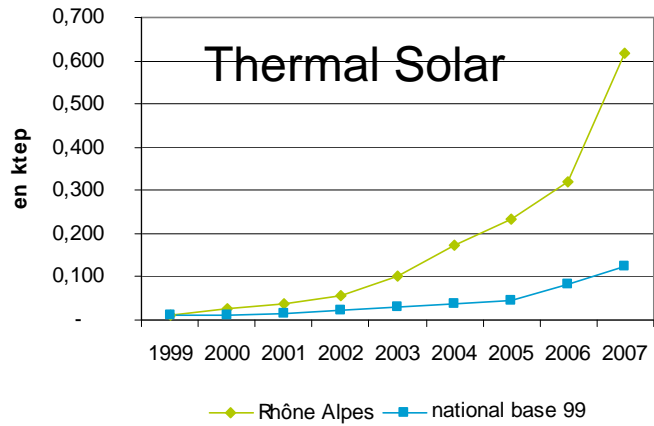
- Presentation of Rhône-Alpes Region
- The role of our regional agency RAEE
- Local and sustainable approach of energy
- Typology of RES & RUE
- Benefits for communities

Presentation of Rhône-Alpes Region

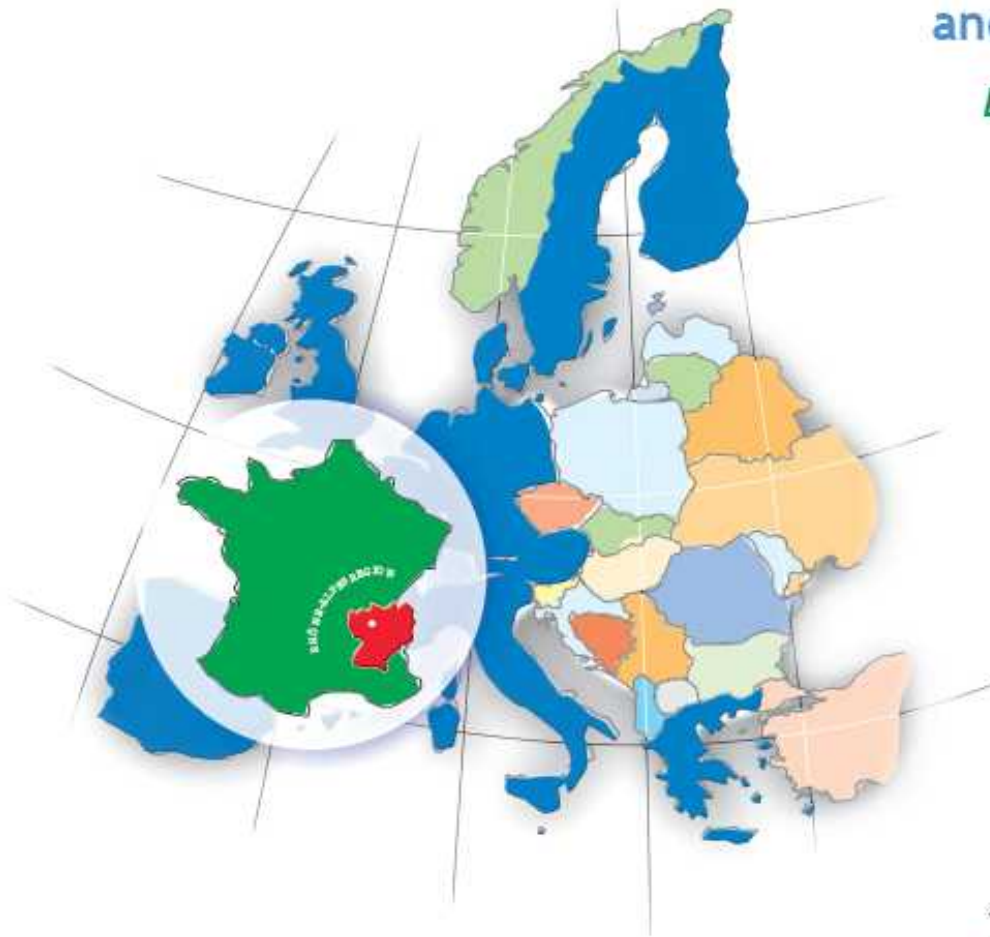
- 6 million inhabitants (~10% of France)
- 44 000 km²
- 2 800 municipalities
- 3 large urban areas : Lyon, Saint-Etienne, Grenoble
- Second economic region of France
- 39% of the French electricity production (nuclear and hydraulic)
- Share of RES in 2005: ~ 17% (~10% in France)



RES in Rhône-Alpes



Rhônealpennergie-Environnement is the regional agency for energy and environment in Rhône-Alpes.



Domains of activity

- rational use of energy,
- promotion of renewable energies,
- protection of the environment,
- practical application of the sustainable development concept.

Statute

- non-profit association of about 40 members including the Regional council, the 8 «-départements-», towns, the energy producers, associations in social housing, in the transport and industry sector, financial bodies...

Target group

- local authorities,
- para-public sector (social housing companies, hospitals).

National and European Partnership

- **FEDARENE** : European Federation of Regional Energy and Environment Agencies : www.fedarene.org
- **RARE** : French Network of Regional Energy and Environment Agencies : www.rare.asso.fr
- **European Programs** (e.g.: SAVE, ALTENER)

Aims of Rhônalénergie-Environnement:

to *inform*, to *advise*, to *accompany*
local authorities and the actors of the para-public sector.



Animation of a resource and exchange center

Examples:

Regional observatory of energy and greenhouse gas emissions, practical application of the sustainable development concept at a local level (local agendas 21)...

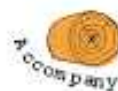


Advising and accompanying local authorities and social housing companies

during the preparation and the realisation of projects.

Examples:

- Wood energy: Hauteville-Lompnes (4 MW),
Saint Marcellin (2 MW),
- Parc of wind turbines of Donzère (3 MW),
- Global energy audits, decentralized electricity production
-by drinking water supply systems and photovoltaics...



Accompanying and carrying out programs or global actions on a territory

Examples:

- To develop renewable energies in the regional natural parks (e.g. in the Vercors),
- European project PROVIDER: to improve the management of mobility on the school way :
www.schoolway.net

Soutenu par :

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The experience in Regional Natural Parks

- Since 1997 the agency has a mission to support regional natural parks in taking into account energy in their territory project
- Dominique JACQUES co-ordinates this mission, he has worked 12 years in The regional natural park of Vercors and also with the national federation of regional natural parks on the territory approach of energy.

The local approach of energy

- It's a **local economical logic** which is not only on the level of energy consumers but integrate relations between local actors.
- A territory makes energy choices and builds an **energy strategy** to answer to its own issues of development and maintenance. Energy is only a tool which serves this project and is not an end in itself.

An experimental approach

1st step

- The link between energy choices and territories issues needs learning : the choice of a technology and how to use it, is never neutral. It must be analysed towards local conditions and its setup.
- The point of view of the consumer of energy is not complete. Even motivated by its territory, it cannot understand alone the consequences of his choices. **Consultation, dialogue and joint approach of actors** allow to adapt choices = good governance needed !

Tools to build 2nd step

- To structure and to setup tools for the territory actors.
- It supposes to use internal means of the structure (the community) and external participations which accept to be involve in a consultation approach.

Make a shared and long term approach 3rd step

Acknowledgement by all the actors of the territory, energy choices or appropriate techniques to answer territory issues :

- First it can be translated by a consensus between actors coming from an efficient consultation.
- It must be formalize in regulatory procedures to appear as a priority and in order to make local territory project prevailing over individual interest.

Typologie of RES-RUE technologies

RES and RUE technologies needs to be appreciate in sustainable development with indicators on :

- Environmental dimension
- Economical dimension
- Social dimension
- Governance

at the two level : global and local

Sustainable development approach of the projects

Governance

Environment

- CO2 emissions per MWh
- Noise level sensitivity
- Aesthetic impact sensitivity
- Local pollution sensitivity
- Biodiversity sensitivity

- Participation of all stakeholders
- Concertation (dialogue) with population
- Communication and dissemination

Social

- Total net employment generation
- Contribution to the regional development and the interception of rapid urbanization

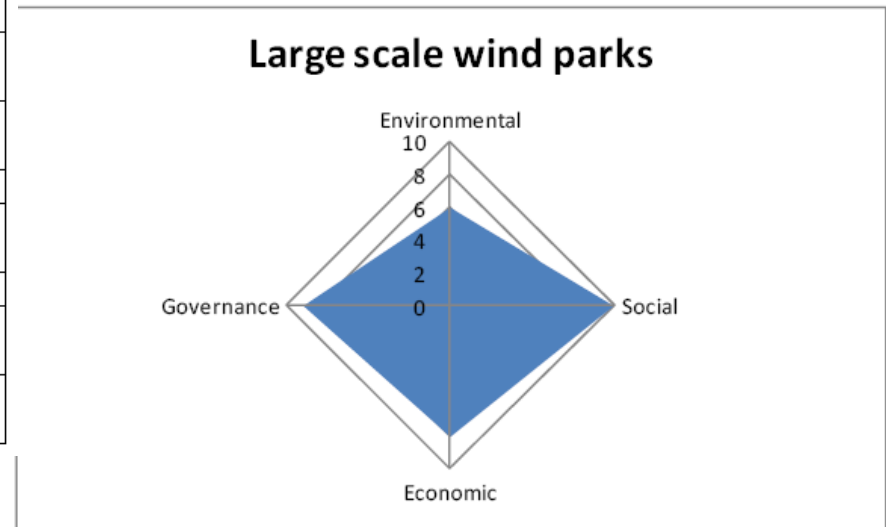
Economic

- Investment and subsidies
- Involvement of local companies
- Involvement of local authorities
- Reduction of dependence on outside of the community sources

Example : large scale wind park

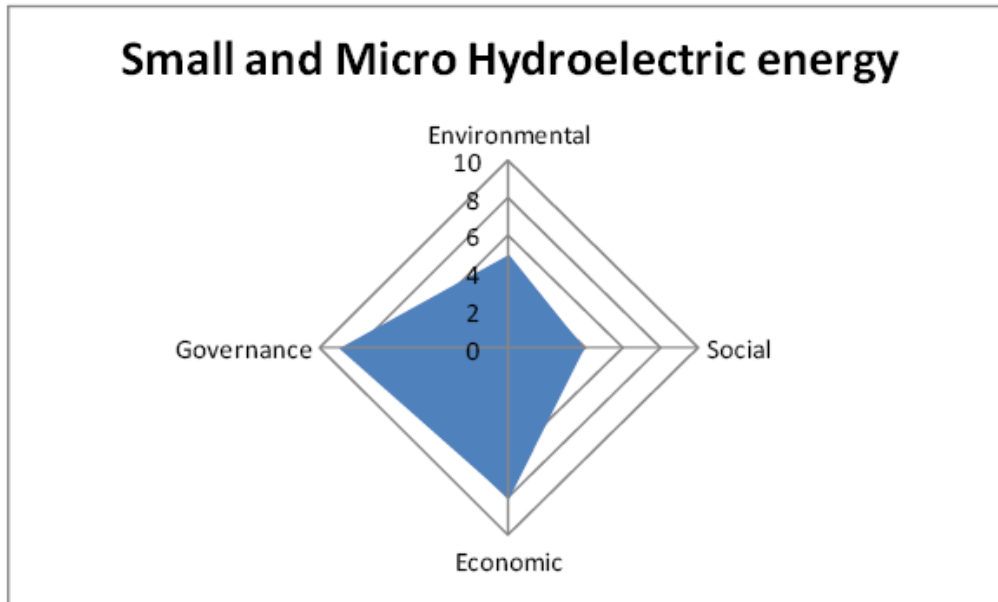
Table 1: Normalized sustainable development indicators for large scale wind parks

Indicator of impact on SD dimensions		Large scale wind parks
Environmental dimension	GHGs emission per MWh produced	1
	Noise level sensitivity	2
	Aesthetic impact sensitivity	3
	Biodiversity sensitivity	2
Social dimension	Total net employment generation	3
	Employment stability	2
Economic dimension	Investment cost per MW	2
	Needed subsidies	1
	Average cost of energy produced	3
	Pay back period	2
Governance	Participation	2
	Dialogue	3
	Dissemination	2



wind energy project is quite well balanced in sustainable development terms, but it requires a special attention concerning the environmental aspects. (landscape and biodiversity)

Example : small hydroelectric turbine



Hydroelectricity can have strong impact on the environment.

It is not so interesting from a social point of view (jobs...)

The visualization of the technology's impact on sustainable development

- It is possible after concertation with local actors to associate a quotation to all the indicators and to compile them in the fourth axes of sustainable and local development.
- This approach constitute a tool to animate the local actors and to make them understanding if some technologies are more profitable than another for the territory and the sustainability.

Benefits identified in the communities

- **Wood energy** development has strong impact on local economy and employment and allows the maintaining of rural areas
- Consulting of actors and population around **wind energy** project, facilitate the acceptance regarding impact on landscape
- Touristic offer can be develop around **Renewable Energy Sources**
- High standards in **building retrofitting** allows local companies to develop their know-how

Thank you for your attention

