SOMMAIRE

1st Part : Our Company

1 PRESENTATION OF THE COMPANY

1.1 HEAD OFFICE

1.2 PLANT

2 KEY FIGURES

3 QUALITY CERTIFICATION

4 ACTIVITIES

5 FINANCIAL DATA

6 PRESENTATION OF FRAMATOME

6.1 GENERALITIES

6.1.1 Head Office

6.1.2 Key figures :

THE TURNOVER IN 1999 : 18,051,936,000

BANK OF EUROPEENNE UNION

6.1.3 The logo :

6.1.4 Activities :

6.2 BUSINESS DEVELOPMENT IN INTERNATIONAL MARKETS :

7 EXPERIENCE ABOUT WIND POWER FARM : EOLE 2005

7.1 BRITTANY, CÔTES D’ARMOR

7.2 LANGUEDOC ROUSSILLON, GARD

7.3 NORD PAS DE CALAIS, NORD

8 OUR J48 WINDMILL : A STATE-OF-THE-ART WINDMILL DEVELOPED BY
MISTRAL INDUSTRIE
2nd Part : Our Proposal

1 THE DEMAND AND THE MARKET

1.1 THE WORLD MARKET :
1.1.1 An important rate of growth :
1.1.2 An industry aware of environmental issues :
1.1.3 Leaders of the world market :
1.1.4 The future of the market :

2 ANALYSIS OF THE COMPETITION :

2.1 THE DIRECT COMPETITION :
2.2 THE INDIRECT COMPETITION IN FRANCE:
2.2.1 The photovoltaïque conversion :
2.2.2 The biomass :
2.2.3 The Hydraulic :

3 MARKETING STUDY

3.1 THE PRICE OF THE PRODUCT :
3.2 THE WINDMILL ENERGY :
3.3 THE DISTRIBUTION OF THE ENERGY :

4 THE TARGET

4.1 OUR CUSTOMERS :
4.2 CUSTOMERS ELIGIBLE :

5 DIFFERENT ACTORS AND FACTORS OF THIS INDUSTRY :

5.1 MANUFACTURER AND PROJECT MANAGER :
5.2 THE AREA :
5.3 THE WIND :
5.4 EDF :

6 STRATEGY AND STACKES

6.1 CORPORATE GOALS :
6.2 WIND POWER FRANCE COMPANY JOINT VENTURE :
6.3 WORK SHARES :
6.4 CAPITAL SHARES :

7 TECHNICAL ASPECTS

7.1 METEOROLOGICAL DATA :
7.2 SITE OF IMPLANTATION :
7.3 WIND TURBINE CARACTERISTICS :
7.4 WIND FARM CONFIGURATION :
7.5 MAINTENANCE OF THE WIND FARM :
7.6 PLANING :

8 FINANCE

8.1 OBJECTIVES :
8.2 PRECISIONS :
8.2.1 ENERGY PRODUCTION PER YEAR :
8.2.2 LABOR COSTS :
8.3 SUBSIDIES :
8.3.1 EOLE 2005 ................................................................................................................. 26
8.3.2 REGION PARTICIPATION ......................................................................................... 26
8.3.3 FISCAL DEDUCTION ................................................................................................. 26
8.4 COSTS DETAILS CONCERNING THE FIRST YEAR (2001)....................................... 26
8.4.1 Others .................................................................................................................... 27
8.5 OPERATING ACCOUNT ............................................................................................... 28
  8.5.1 Economic Profitability (without financing) ............................................................... 28
  8.5.2 The operating costs will be the following : ............................................................ 31
  8.5.3 the sales price will be the following : ................................................................. 31
  8.5.4 the margin will be very interesting : ................................................................. 31
8.6 FINANCING TABLE .................................................................................................. 31
8.7 BALANCE .................................................................................................................. 34
8.8 SOME RATIOS .......................................................................................................... 36

9 ENVIRONMENTAL STATEMENTS ............................................................................
1st PART : OUR COMPANY :

MISTRAL INDUSTRIE

1 Presentation of the company

A well-known actor in the wind industry, MISTRAL INDUSTRIE is a subsidiary of the group FRAMATOME. Our company has developed and constructed over 20 wind farms, comprising more than 500 MW. MISTRAL INDUSTRIES in Europe and Asia, develops and manufactures state-of-the-art wind turbine technology ranging from 300 kW to 10 MW.

1.1 Head Office

MISTRAL INDUSTRIE
Tour Framatome
1, place de la Coupole
92 400 COURBEVOIE
FRANCE

1.2 Plant

MISTRAL INDUSTRIE
27, rue de l’industrie
59 460 JEUMONT
FRANCE

Your interlocutors will be :

- Laurent Maignot - in charge of Corporate strategy
- Sophie Marchesseau - in charge of Marketing strategy
- Perrine Bertrand - in charge of Corporate finance
- Sébastien Guillet - in charge of Technical expertise
- Arnaud Bonafos - in charge of institutionals relations
- Nicolas Sambouni in charge of environmental management

2 Key figures

Creation : 1989
Juridical type : corporation
Turnover (1998) : 815,722,000 FRF
124,348,656 EURO
Export (1998) : 229,681,000 FRF
35,012,570 EURO
Export Zones : all countries
Number of employees : 6 (Courbevoie)
900 (Jeumont)
3 Quality Certification

All MISTRAL INDUSTRIE
Standards : ISO 9001
Organism : AFAQ
Certificate number : 3638

Military applying
Standards : AQAP AA0
Organism : OTAN

4 Activities

Conception, production, maintenance, renovation, sell, installation and services associated (after-sales services, formation) of electric rotary machines and equipment associated in the industry, the marine and the nuclear power.

Our wind activity is recent but we are sure we are on the good way. Indeed, we are working on ambitious projects such as EOLE 2005.

Mistral Industrie is capable to provide an unrivalled spectrum of services and skills:

4.1 Planning Phase

Grid Connection of Large Wind Turbines
- negociation with local partners (EDF regional services),

Design of wind farms
- site prospecting,
- preliminary site assessment,
- wind speed monitoring and data analysis,
- terrain modelling and micro-siting,
- energy yield assessment and cartography,
- turbines selection and wind farm design,
- negociation with land owners (option agreement...),
- public relations and lobbying,

4.2 Pre-Investment Phase

4.2.1 Pre-investment studies
A pre-investment study is carried out in order to decide whether a wind energy project is feasible or not. The study should prove that the planned project is technically and economically viable and bankable
- choice of technology,
- grid connection,
- banking schemes.
- site preparation and environmental issues
- photo and video montages,

4.2.2 Financing Opportunities
After the UNCED conference on global environmental issues (Rio de Janeiro, 1992), the World Bank was one of the first international agencies to present a financing scheme for renewable energy technologies. Other programs followed such as Finesse and the more recent Joint Implementation initiatives and Clean Development Mechanisms (CDM). The lecturer will explain their history and the status of renewable energy sources within global energy policies, and will give an overview of current developments and possible finance schemes.

- selection of partners: financial institutions, local industry people...
- grants raising from local (communes and communities of communes), regional (Conseils Généraux, Regional Councils), national and european levels,

4.3 Implementation Phase
4.3.1 Implementation Strategies
The introduction of wind energy in a country requires support by a national energy policy. A number of legal and economical measures, such as tax incentives, subsidies and a revision of the tariff structure may be conceived for this purpose. Mistral Industrie can help your organisation to integrate a new country.

4.3.2 Technology Assessment
Mistral Industrie produces the state of the art of current wind turbine designs. Methods are described to classify and evaluate different wind turbine types, including reliability, output, investment and recurrent costs, after sales services etc.

4.3.3 Project Management
Mistral Industrie is expert in project management, such as: project-cycle phases; plan of operations; operation; control & monitoring; evaluation.

4.3.4 Manufacture, Installation & Monitoring
Mistral Industrie provide advices to companies all around the world in: human resources; management tasks and employees categories, control and monitoring of availability; output and capacity; breakdowns and maintenance efforts; institutional infrastructure and role of authorities; insurance's; and competitors.

4.3.5 Standards & Certification
Mistral Industrie is fully certified by international (IEC) and national standards for wind turbine. The importance of certification and the relevant procedures and criteria, are discussed.

4.4 Operational Phase
Mistral has been involved in numerous wind farming projects with different European partners and is currently working in France, overseas regions and in developing countries on diversified wind topics, such as: wind pumping, wind turbines for remote areas, and wind farms connected to the grid.

5 **Financial Data**

<table>
<thead>
<tr>
<th>In millions FRF</th>
<th>12/98</th>
<th>12/97</th>
<th>12/96</th>
<th>Evolution from 96 to 98 in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.1.1.1.1 Number of months</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>5.1.1.1.1.1 Turn over</td>
<td>816</td>
<td>771</td>
<td>624</td>
<td>+ 30.77</td>
</tr>
<tr>
<td>Profit before tax</td>
<td>194</td>
<td>125</td>
<td>103</td>
<td>+ 88.35</td>
</tr>
<tr>
<td>Net Profit</td>
<td>106</td>
<td>93</td>
<td>46</td>
<td>+ 130.43</td>
</tr>
<tr>
<td>Cash-flow</td>
<td>77</td>
<td>46</td>
<td>63</td>
<td>+ 22.22</td>
</tr>
<tr>
<td>Investments</td>
<td>29</td>
<td>17</td>
<td>20</td>
<td>+ 45%</td>
</tr>
<tr>
<td>Return (%)</td>
<td>12.98</td>
<td>12.01</td>
<td>7.32</td>
<td>+ 77.32</td>
</tr>
</tbody>
</table>

Stockholders: FRAMATOME (100%)

6 **PRESENTATION OF FRAMATOME**

6.1 **Generalities**

6.1.1 Head Office

FRAMATOME/
La Defense Cedex
92084 Paris
FRANCE
Plant

6.1.2 Key figures:

Legal form: Anonym Society
Capital: 2.040.000.000 F
Date of the fondation: 1958

The turnover in 1999: 18.051.936.000
Export Areas: all countries
Different Bank: Société Générale
Crédit Lyonnais
National Bank of Paris
Bank of Europeenne Union
6.1.3 The logo:

6.1.4 Activities:

Group's activities are based on two major sectors of comparable size: energy and connectors. It is the world's leading nuclear manufacturer and the world's number two connector manufacturer.

Set up to develop the pressurized water reactor system in France, the Framatome Group has become the leading designer and manufacturer of nuclear steam supply systems and nuclear islands based on the pressurized water reactor technology. The Group's success is not only the result of the French nuclear energy program, but is also due to its efforts in reaching the top spot in exports over the past twenty years. Framatome has been able to use the skills that it has acquired to advantage and to confirm its rank over the long term, while developing complementary and ongoing activities in:

- nuclear fuel - the world leader in this field - with mastery over the whole chain, from design to fabrication of the assemblies forming the core of the reactor
- and by providing a full range of nuclear services - number one in Europe and number two in America - for the inspection, maintenance and improvement of power plants.

At the same time, Framatome has branched out and developed in the connector field, a profit-making activity experiencing a high rate of growth and undergoing consolidation at the world level. For the past ten years, Framatome has continued its federating role, rationalised the regrouped players and finally boosted the overall value of the business. In the space of just a few years and in a market formerly dominated by American companies, Framatome has given French industry a world leader, FCI - Framatome Connectors International, the company's subsidiary.

In 1999, the Group's revenues came to 4.21 billion Euros, including more than half from exports as a result of the company's involvement in many projects all over the world. Over 28,000 employees are devoted to the company's success and more than one-fourth of them are based outside Europe.

Now the global leader in the nuclear power field, Framatome has become the world's second leading connector manufacturer in less than a decade.

6.2 Business development in international markets: 
Framatome, the world's leading manufacturer of pressurized water reactor (PWR) nuclear steam supply systems and nuclear islands, has greatly expanded its international business activities in the 1980s, notably in Belgium, South Africa, the Republic of Korea, and the People's Republic of China, where several nuclear power plants have been built.

Starting in 1980, Framatome has added to the range of products and services it offers and conquered a top-ranking position in the highly competitive market for nuclear fuel reloads as well as in that of nuclear services to the utilities.

In the connectors business, Framatome Connectors International (FCI) now ranks third in the world and covers the entire market, with its 43 factories and business offices spread over the globe. FCI produces a full range of connectors for the electronics, automotive, interconnection, industrial, and electrical equipment markets. With specialized subsidiaries in the high-technology mechanical engineering field, Framatome has also sold a considerable quantity of equipment around the world. In particular, the company is a supplier to the oil and gas, energy, civil works, agribusiness, and armaments segments, for their international contracts.

In all three of its main business fields, Framatome is positioning itself abroad in growing sectorial markets and in the geographical areas where economic expansion is the greatest. Today, more than one-half of its sales are made outside France.

7 EXPERIENCE ABOUT WIND POWER FARM: EOLE 2005

EOLE 2005 is a project launched by the government in 1999, whose aim is to develop the wind power within 2005. MISTRAL INDUSTRIE is a favored partner. Indeed, a large part of the windmills will be built by the FRAMATOME subsidiary.

7.1 Brittany, Côtes d’Armor

In Brittany (Côtes d’Armor), MISTRAL INDUSTRIE uses its technologies to implement the Plougras wind farm. Thanks to J48, our state-of-the-art windmill, the production reaches now 8 x 750 kW = 6 MW a day.

7.2 Languedoc Roussillon, Gard

In Lirac, MISTRAL INDUSTRIE has implemented 14 windmills J48 (14 x 750 kW = 10.5 MW).

7.3 Nord Pas de Calais, Nord

Our knowledge allows us to implement a wind farm offshore near Dunkerque in 1999. The wind power of this farm reaches, thanks to our J48, 10 x 750 kW = 7.5 MW.
Our J48 windmill: a state-of-the-art windmill developed by MISTRAL INDUSTRIE
1 The demand and the market

1.1 The world market:

1.1.1 An important rate of growth:
Currently, the windmill energy has the most important growth. In fact, the windmills achieve a power of 13000 MW through the world. We estimate that this power can be double in 2003. The average growth of the market is about 30% a year.

With this exceptional growth, the windmill energy keeps a leader position with the different sources of energy. From 1990 to 1999, the power was multiplicated by 6.5. In 1990 the power was 2000 MW against 13400 W in 1999.

This growth is the result of the decrease of the production costs.

1.1.2 An industry aware of environmental issues:

It’s an industry which uses a high technology. We can estimate that 90% manufacturers of windmill are europeans. The windmill electricity is a young industry which reach its maturity with rapidity. Moreover, the environmental aspects are more and more important in western countries. Since few years, this sector is in its growth phase.

The growth of the windmill industry produces decrease of prices:
Actually, wind turbines are built by assembly lines. Now, a wind turbine is composed by several components which achieved by different providers. If companies fabricate more wind turbines, more prices decrease. Consequently, this decrease of prices of windmill affects the price of electricity. In the last ten years, we noticed a decrease in prices KWh.

1.1.3 Leaders of the world market:
The sum of the three first market in 1999 represents 62% of the total power in the same year. These three countries represent about 60% of the total power which was installed in 1999. These three countries are:

The Germany: In 1999, the power installed was about 1200 MW.
The United States: The windmill power was 732 MW.
The Spain: with a windmill power of 650 MW.

<table>
<thead>
<tr>
<th></th>
<th>Windmill power 1998</th>
<th>Windmill power 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>793</td>
<td>1200</td>
</tr>
<tr>
<td>United States</td>
<td>193</td>
<td>732</td>
</tr>
<tr>
<td>Denmark</td>
<td>310</td>
<td>300</td>
</tr>
<tr>
<td>Spain</td>
<td>368</td>
<td>650</td>
</tr>
<tr>
<td>India</td>
<td>82</td>
<td>62</td>
</tr>
<tr>
<td>Great-Britain</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Holland</td>
<td>50</td>
<td>53</td>
</tr>
<tr>
<td>China</td>
<td>55</td>
<td>76</td>
</tr>
<tr>
<td>Italy</td>
<td>94</td>
<td>50</td>
</tr>
<tr>
<td>Sweden</td>
<td>54</td>
<td>40</td>
</tr>
</tbody>
</table>

We can notice that France is not in this list. Thus, its market represents a strong potential of development.

1.1.4 The future of the market:
A recent study from Greenpeace and EWEA has showed that it was impossible to produce 10% of total electricity needs with windmill energy. Nevertheless, at the end of 2020, we can estimate that a total of 1,2 million MW will be installed in the word and it will produce 10.85% of the total consumption of electricity. Consequently the cost of this energy will decrease in 2020: from 5 euros to 3 euros.

2 Analysis of the Competition:

2.1 The direct competition:
The French electricity market is particular because on one side EDF could be our competitor for selling electricity that we produce. Indeed, also the French market is now open to the competition EDF remains the first supplier in France. But, on the other side, EDF could be our partner for a wind farm project. Actually, the French government launched a project called “EOLE 2005” consisting in a warranted purchase of electricity produced by wind energy. We can participate to EOLE 2005 if EDF accepts our proposition of wind farm.

2.2 The indirect competition in France:

Today, it exists some different energies which are renewable and present economical and technical interests. These new energies represent a potential competitor of the windmill energy. EDF is very interesting about them and try to include in its policy: In fact, EDF wants to respond at two important waitings: Satisfy different needs of the customer and respect the economical contraint.

We are going to introduce you some of them:

2.2.1 The photovoltaïque conversion:
It’s the conversion of the solar energy. Photovoltaïques Generators can produce electricity on the consumption area. The principal inconvenient of this system is the important cost of the investment.

2.2.2 The biomass
It’s the use of agricultural wastes. We burn wastes and we obtain an energy source. The valorisation of wastes is a decisive way of development because it aims to ameliorate the environment problem. Furthermore, it permit to decrease garbages in cities. This method permit to produce electricity, steam and methane.

2.2.3 The Hydraulic
The hydroelectricity is the most important renewable sources. We create electricity with the hydraulic energy.

We would like to add that EDF provides some subventions to those other renewable energies.
3 Marketign study

3.1 The price of the product:

The cost price of kWh results with two key factors:
The frequency of the wind where the wind turbine is installed.
The length life of the equipment.

Moreover, more the connection is complicated and more the installation is expensive.

3.2 The windmill energy

This energy permits to lighten an electrical network, in particular during the winter when needs are important.

Avantages:
A production which expands on the territory and close to consumers.
The windmill energy doesn’t produce chemical pollution in the atmosphere.
No wastes
No radioactive and thermal emissions.
Creation of different jobs when a windmill project is implanted.

Inconvenients:
Slave of the wind
The windmill energy is more expensive than classical and other renewable sources.

3.3 The distribution of the energy:

We will elaborate a connection to the electricity national network. If we have a problem, the wind turbine will be automatically disconnected to the grid.

The wind energy is produced: this electricity is immediately usable by other consumers present on the area (firms, pubs….). This permits to limit the losses bound to the energy’s distribution and to produce locally, close to the consumers.

4 The Target

4.1 Our customers:

The transitory phase of the opening of the french electricity market began on the 1999, December 19th, and will end with the complete modification of the French law. During this period, the customers allowed to change their electricity supplier (namely to leave EDF) must consume more than 100 GWh / site. Those customers are said “eligible customers”. All the same, this limit represents an opening of the French electricity market of 22%.

The next step in the opening of the electricity market in France will be to decrease the limit of power from 100 GWh to 16 GWh in a first time, and to 9 GWh in a second time. Thus, the eligible consomers will represent 25% of the French consomers.
It is here important to notice that as long as the limit is fixed to 100 GWh, we will not be able to enter in the competition market. Indeed, the power of the wind farm should be 39 GWh per year. This not enough to provide all the power necessary to an “eligible consumer” of the first phase. It will be possible later, when the limit of eligibility will be decreased to 16 GWh. The price of electricity will be then fixed by the competition rules.

Another problem for us is that electricity produced by wind energy is still not profitable: we need subventions provided by the french government and EDF through the EOLE 2005 project. Thus, as long as the competitiveness of electricity produced by wind energy is not reached, we will have to sell our production to EDF. According to studies from Greenpeace, this limit will be reached in 2020.

As a conclusion, in a first step, we will sell our electricity to EDF with interesting conditions of purchase (subventions from EOLE 2005 and “purchase bond” imposed to EDF by the government concerning renewable energies). In a second step, when the profitability of wind energy will be ensured AND when the french market will be open to the “eligible customers” consuming at least 16 GWh, we will be able to sell our production to the eligible customers on an open market, with prices fixed by competition rules.

### 4.2 Customers eligible:

More than 2500 companies in France have been identified in France as potential customers. All these important companies could be interested by buying electricity from renewable energy because it represents a major way to improve their environmental protector image.

### 5 Different actors and factors of this industry:

#### 5.1 Manufacturer and project manager:

A windmill projet gathers different industrial actors. These actors are organized around two principal figures : the manufacturer of the windmill and the project manager.

A windmill project relies on the relations between these two figures. Interests are reciprocal : opening on new markets for the manufacturer and a best control of the technology for the project manager.

#### 5.2 The Area:

It’s the site where we are going to implant our project. This factor is very important because we must locate an interesting area and identify inconvenients of this place. The objective is to determinate extern factors which could limitate the project development.

#### 5.3 The wind:

Furthermore, an important actor is the wind. A windmill functions with a strong wind. It’s very important to evaluate wind in the area where we want to implant our project. During the winter, we can say the wind blows stronger than the summer. Furthermore, energy needs are the most important in the winter.
5.4 **EDF:**

Until 1999, EDF (Electricité de France) was the only authorized supplier of electricity in France. But the European Union decided to open the European electricity market to the competition (law of the 1999, December 19th from the European Parliament). Each country of the European Union is now trying to transpose this law on its own territory by changing the rules of its own market.

In France, the process began in 1999 with a first debate in the French National Assembly ending with a law adopted on the 2000, February 10th. This law regulate “the modernization and the development of the Public Service of electricity” in France and intends to organize the market. But decrees must still be voted until the complete opening of the market to competition. That is why, before the complete achievement of the legal procedure, the French government put the French electricity market in a “Transitory phase”.

It’s important to have a convention of electricity purchase when we implant our project. We have decided to achieve a connection to EDF grid. EDF will represent our principal customer.

6 **Strategy and stackes**

6.1 **Corporate goals**

MISTRAL INDUSTRIE is involved in the energies of the future. MISTRAL is capable to develop wind farms and is involved in many projects in France like services and facilities supplier. We had never been involved in terms of investor. Our good financial situation gives us the opportunity to implement a new strategy: enlarging our activities. After a value added chain study, we had decided to invest in the exploitation of wind farms. MISTRAL INDUSTRIE believe that it is today necessary to be with a pioneer of the market to develop economies of scale. All opportunities in this way will be deeply assessed by the Mistral Industrie experts.

Projects selection will be based on:
- ability to match financial ratios (ROI > 15%)
- ability to increase wind farm management know how
- partners (open mindness to intercultural projects and capability to create confidence)

To be a pioneer of renewable energy production in France is an opportunity supported by the government. The “projet Eole 2005” allows wind farms to be highly profitable and attractive by fixing high sales prices for 10 years. Government policies in favor of renewable energies influence also over institutionals which provide supporting. That’s the reason why our knowledge of the institutionals could be a major strength in the joint venture.

6.2 **Wind Power FRANCE Company Joint venture**

We believe that protection of the environment is a major increasing need of the population. So wind farm will be the energy of the future in France. The potential of development is every day higher because of the increasing petroleum price. That’s the reason why this project
Wind Power Associates
target the objective to develop a profitable business model for wind farm and manage it to the success.

6.3 Work shares

We believe that investment in renewable energy production should be done by two or more investors plus the subsidies of institutionals. Because the costs per KW/h is higher than in the traditional energy production and should be financially sustained by grants. Our company believe in a strong implication of the stockholders. That’s the reason why we’ll be involved in the project in terms of investor (services, facilities and financement) and supplier (facilities or maintenance) for the joint-venture. We think that it could be possible, in case of success, to reinvest in the joint venture for more ambitious objectives. We believe that if experience confirm our good relations, it should be necessary to be involved in a larger project like : to create wind farm production facilities, renewable energy consulting office…

MISTRAL
6.3.1.1.1.1 Invest in WIND POWER FRANCE
6.3.1.1.1.2 Supply WIND POWER FRANCE

<table>
<thead>
<tr>
<th>MISTRAL</th>
<th>MISTRAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.1.1.1.1 Invest in WIND POWER FRANCE</td>
<td>6.3.1.1.1.2 Supply WIND POWER FRANCE</td>
</tr>
<tr>
<td>Establish the site location by using our database of possible sites locations. We need short delays.</td>
<td>Produce wind mill</td>
</tr>
<tr>
<td></td>
<td>Join the wind mill</td>
</tr>
<tr>
<td></td>
<td>Train employees</td>
</tr>
<tr>
<td></td>
<td>Provide the site maintenance</td>
</tr>
<tr>
<td>Provide our strong knowledge of the french institutions (local institutions, french wind power agency, EDF, land owners, green labour…) This’ll help to raise grants, obtain certifications and autorisations.</td>
<td></td>
</tr>
<tr>
<td>Provide high crédit rating</td>
<td></td>
</tr>
</tbody>
</table>

6.4 Capital shares

<table>
<thead>
<tr>
<th>Mistral engeneering</th>
<th>WPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% (tangible investments)</td>
<td>70% (capital)</td>
</tr>
</tbody>
</table>

The joint venture will be a “société anonyme” which permit to stockholders to sell their equities easily. Using the french accounting schema will be an obligation. In case of disagreement, all the stockholders will have a blocking minority. The tribunal de commerce de Narbonne will be compétent in case of litigation.
7 Technical aspects

7.1 Meteorological data

This map of wind show the wind speed in France.

7.2 Site of implantation

We need deivepment site to install the wind turbine. This ground should be a hill to exhibit all wind turbine face the wind. It should be near a road and a middle electric line. We choose a ground near Narbonne because there is a high speed of wind and it’s near a road and a middle electric network. We also choose this ground because the city of Narbonne give us some money to install own wind turbine near her city.
7.3 **Wind turbine characteristics**

This installation consists in a implantation of 20 wind turbines J48 (750 KW and 48 diameter meters), a total power of 15 MW.

Those 750 KW wind turbines will be connected on 20 000V EDF’s electric line. The characteristics of those wind turbines are:

- height of hub : 46 m
- diameter of rotor : 48 m
- total height : 70 m
- nominal wind speed : 14 m/s
- rotation speed of rotor : 5 to 26 tr/min
- time of wind’s production including between 4 to 25 m/s
- Component of the wind turbine :
All wind turbines are equipped with an electric transformer which transform the 380 V of the generator in 20 000V. There are installed in the tower of the wind turbine.

7.4 Wind farm configuration

This installation will be composed with 20 wind turbines which will be installed on line. There will be far between of 200 metres. All wind turbines are connected with cable buried to a central post which will be connected to EDF’s electric network. The central post will be composed with electric protection and a electric system against the energy excess of the middle electric network.
7.5 **Maintenance of the wind farm**

The wind farm will function automatically so it will only necessitate a technical inspection one time by quarter. This maintenance will concern three parts:

- Electrical part
- Mechanical part
- Electronic part

The electric part concerns:
- the generator
- the central post
- the transformator 380 V/20 000 V

The mechanical part concerns:
- the nacelle
- the gear box
- the hub and blades
- the rolling of nacelle’s orientation
- the system of nacelle’s orientation
- the system of blades’s orientation
- the tower

The electronic part concerns:
- the system of power’s control
- the electronic system of the nacelle’s orientation
- the electronic’s control of electrical distribution

We will be need three technicians whose will supervise the construction of the wind farm and whose will repair it when a problem will arrive. An automatic system stop the functioning of the wind farm when a big problem will arrive and it will give a signal, which inform the technicians, to an external office.

7.6 **Planing**

<table>
<thead>
<tr>
<th></th>
<th>Month 1</th>
<th>Month 2</th>
<th>Month 3</th>
<th>Month 4</th>
<th>Month 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthworks</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Wind turbine’s construction</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>wind turbine installation on the ground</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Electrical equipement installation</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>connection on the electrical line</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Experimentation</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>
8 Finance

8.1 OBJECTIVES

- An excellent investment paid back in less than 1 year
- A large surplus of treasury which can be invested in other projects
- Huge dividends expected
8.2 PRECISIONS

For information, 1 USD = 7.7766 FRF on November 21st, 2000.
However, we project an action concerning the currency to prevent too numerous fluctuations.
There are a lot of possibilities to prevent such currency issues. An appropriate solution will be taken in a given time.
Data in FRF could be more appropriated for investments in France. Do not hesitate to ask us the French data.

8.2.1 ENERGY PRODUCTION PER YEAR

We consider we are able to receive 46% of the maximum possible energy generation of the equipment.

8.2.1.1 First phase
The joint venture will invest in 20 wind mills of 750 Kwh which will able to produce each year:

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60 444 000 kwh</td>
<td>60 444 000 kwh</td>
<td>60 444 000 kwh</td>
<td>60 444 000 kwh</td>
<td>60 444 000 kwh</td>
</tr>
</tbody>
</table>

8.2.1.2 Second phase
We project to invest in 5 new wind mills of 1.3 MGw (capacity forecasted by specialized magazines in 2005-2006) to cater to the market expectations.

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>86 636 400 kwh</td>
<td>86 636 400 kwh</td>
<td>86 636 400 kwh</td>
<td>86 636 400 kwh</td>
<td>86 636 400 kwh</td>
<td>86 636 400 kwh</td>
</tr>
</tbody>
</table>

8.2.2 LABOR COSTS

According to the 1999 – 2000 wages CD (from the PRAT Multimédia Edition), the team wages will be the followings:

- 1 executive (CEO) ➔ the firm manager will be paid 65 581,36 USD and he will assume the accounting and marketing aspects, as a lot of French micro-firms. We propose a French manager who will be introduced to the government.
- 4 technological experts who specialize in the production of wind mills ➔ 1 production engineer specialized in quality paid 28 932,95 USD. He will have an experience in energy and environment, such as the academics you asked.
- 3 maintenance agents each paid 55 165,50 USD specialized in electricity, electronics and mechanics.

From 2001 to 2005, the annual payroll will reach 149 679,81 USD.
In 2006, as we invest in 5 more wind mills, we will need 1 more maintenance agent paid 18 388,49883 USD so the labor costs will reach 168 068,31 USD.
8.3 **SUBSIDIES**

8.3.1 **EOLE 2005**  
Thanks to the project EOLE 2005, a subsidy is granted by the government. It reaches 0.02958 dollar per kW produced.

8.3.2 **REGION PARTICIPATION**  
The region Languedoc Roussillon allows subsidies to favoured renewable energy, such as wind mill.  
The subsidy reaches 50% of the total investment but the limit is 128 590.90 USD.

8.3.3 **FISCAL DEDUCTION**  
To encourage new firms, the state allows a 25% reduction if the firm tax during 5 years. Moreover, for renewable energy firms, a 4 years surplus is granted.

We are still looking for new subsidies and we are glad to make you known we are about to find new ones. We will contact you as soon as we have more details.

8.4 **COSTS DETAILS concerning the first year (2001)**

Thanks to the Canadian government, we have found a very useful software used by professionals in renewable energies to estimate costs.

*Note* Total Costs for 2001 : 14 168 441.09 USD

<table>
<thead>
<tr>
<th>Feasibility study</th>
<th>% costs 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site inspection</td>
<td>0.01%</td>
</tr>
<tr>
<td>Wind mill potential evaluation</td>
<td>0.21%</td>
</tr>
<tr>
<td>Environmental evaluation</td>
<td>0.01%</td>
</tr>
<tr>
<td>Preliminary conception</td>
<td>0.03%</td>
</tr>
<tr>
<td>Costs evaluation</td>
<td>0.03%</td>
</tr>
<tr>
<td>Project management</td>
<td>0.02%</td>
</tr>
<tr>
<td>Travels and accommodations</td>
<td>0.07%</td>
</tr>
<tr>
<td>Others</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total #1</strong></td>
<td><strong>0.39%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Development</th>
<th>% costs 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreements and license</td>
<td>0.19%</td>
</tr>
<tr>
<td>Property tax</td>
<td>0.06%</td>
</tr>
<tr>
<td>Land-surveying</td>
<td>0.04%</td>
</tr>
<tr>
<td>Project financing</td>
<td>0.37%</td>
</tr>
<tr>
<td>Accounting services</td>
<td>0.09%</td>
</tr>
<tr>
<td>Project management</td>
<td>0.42%</td>
</tr>
<tr>
<td>Travels and accommodations</td>
<td>0.21%</td>
</tr>
<tr>
<td>Others</td>
<td>0.02%</td>
</tr>
<tr>
<td><strong>Total #2</strong></td>
<td><strong>1.41%</strong></td>
</tr>
</tbody>
</table>
### Engineering

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windmill localization</td>
<td>10 500</td>
<td>0,07%</td>
</tr>
<tr>
<td>Mechanic conception</td>
<td>11 200</td>
<td>0,08%</td>
</tr>
<tr>
<td>Electric conception</td>
<td>21 125</td>
<td>0,15%</td>
</tr>
<tr>
<td>Civil engineering</td>
<td>22 000</td>
<td>0,16%</td>
</tr>
<tr>
<td>Bid invitation and contracts</td>
<td>0</td>
<td>0,00%</td>
</tr>
<tr>
<td>Works supervising</td>
<td>52 000</td>
<td>0,37%</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0,00%</td>
</tr>
<tr>
<td><strong>Total #3</strong></td>
<td><strong>116 825</strong></td>
<td><strong>0,82%</strong></td>
</tr>
</tbody>
</table>

### Energetic equipment

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost (€)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind mills</td>
<td>10 034 000</td>
<td>70,82%</td>
</tr>
<tr>
<td>Spare parts</td>
<td>232 713</td>
<td>1,64%</td>
</tr>
<tr>
<td>Transport (France to France)</td>
<td>200 000</td>
<td>1,41%</td>
</tr>
<tr>
<td>8.4.1 Others</td>
<td>4 500</td>
<td>0,03%</td>
</tr>
<tr>
<td><strong>Total #4</strong></td>
<td><strong>10 471 213</strong></td>
<td><strong>3,09%</strong></td>
</tr>
</tbody>
</table>

### Related infrastructures

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Cost (€)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind mills foundation</td>
<td>800 000</td>
<td>5,65%</td>
</tr>
<tr>
<td>Wind mills erection</td>
<td>400 000</td>
<td>2,82%</td>
</tr>
<tr>
<td>Access ways</td>
<td>30 000</td>
<td>0,21%</td>
</tr>
<tr>
<td>Connection line and station</td>
<td>600 000</td>
<td>4,23%</td>
</tr>
<tr>
<td>Exploiting Building</td>
<td>40 000</td>
<td>0,28%</td>
</tr>
<tr>
<td>Transport</td>
<td>8 000</td>
<td>0,06%</td>
</tr>
<tr>
<td>Land purchase (2,57 USD the m.)</td>
<td>41 149</td>
<td>0,29%</td>
</tr>
<tr>
<td><strong>Total#5</strong></td>
<td><strong>1 919 149</strong></td>
<td><strong>13,55%</strong></td>
</tr>
</tbody>
</table>

Concerning the land purchase, we have considered the purchase of small pieces of a farmer’s land for a cheap price. Furthermore, we consider that only 2% of the land will be needed.
The assessment is the following : 20 wind mills x 4,000m x 200m x 2%

### Diverse

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost (€)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>3 600</td>
<td>0,03%</td>
</tr>
<tr>
<td>Interests during work</td>
<td>577 440</td>
<td>4,08%</td>
</tr>
<tr>
<td>Unexpected costs</td>
<td>824 914</td>
<td>5,82%</td>
</tr>
<tr>
<td><strong>Total #6</strong></td>
<td><strong>1 405 954</strong></td>
<td><strong>9,92%</strong></td>
</tr>
</tbody>
</table>
8.5 OPERATING ACCOUNT
8.5.1 Economic Profitability (without financing)