

Hypothetical Case — Renewable Energy: Wind and Solar



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THE STORY ABOUT SMART TURBINE RENEWABLE ENERGY: WIND AND SOLAR

Dr. Laura Borgarello was the director of the Institute for Advanced Energy Research (IAER) at Karpatia University, a publicly funded University. A petroleum engineer with a PhD in chemistry, she loved her work. For the last ten years, working with a selected and dedicated group of scientists and graduate students, she had been deeply involved in a research project on thin film technologies for energy collection and storage. She was fascinated by these thin films, ultra fine layers of silicon and other materials, that were essentially invisible but were powerful agents for collecting and storing solar energy.

Her dream was to develop an ideal thin film technology that could be applied to multiple uses wherever solar energy collection was needed. Her favorite application was for wind turbines to harvest energy from the sun during wind production or when winds were still. In her lab, she tried numerous materials, but each seemed to have a critical disadvantage. Using traditional silicon, or a-Si film, did not work well because of degradation problems when the film prototype was actually exposed to air and wind. Other films such as cadmium telluride (CdTe) had very high laboratory efficiency, but less than optimal because of manufacturing and disposal problems related to the toxicity of cadmium.

Dr. Borgarello had a group of superb scientists, researchers and a number of bright young graduate students interested in working in this new field that was growing every year. One professor in particular, Dr. Mohamed Gonzi, a physicist from the Applied Physics Laboratory, was eager to collaborate with Dr. Borgarello on her project: An integrated system including a hybrid of stacked thin film and a wind turbine to be used as a decentralized energy system in small buildings and residences.

Invention

By December of 2011, the two professors had a prototype of the system they called the “Smart Turbine”. The beauty of the Smart Turbine was that it could function as a highly efficient wind energy collector, due to Dr. Gonzi’s superb turbine design, and it also used a new durable photovoltaic (PV) thin film developed by Dr. Borgarello to collect solar energy. Both elements of the system were integrated using software to measure the energy flow and to increase synergy between the wind and solar elements. Whenever the wind ceased, the solar collection intensified. Whenever the sky was cloudy, the wind system became dominant. The prototype of the Smart Turbine was a success although there were some elements that could be improved.

Disclosure and Protection

The Director of the University Technology Management Office (TMO), a patent attorney, Mrs. Narcisa Lopez, met with Dr. Borgarello and Dr. Gonzi. The first thing she did was to help them to fill in an “**invention disclosure forms**”, describing the research results they had that seemed new and useful. She explained that the invention will be evaluated by the **Evaluation Board** of the University, that will decide if the value of the invention from a technical, legal and market point of view is promising to the point that University will invest further resources and commercialize it. The decision of the Board will be taken in two weeks period. She also explained and gave them a copy of the **Karpatia University Intellectual Property (IP) Policy**, which stated that all rights in inventions developed by faculty, staff and students using University and Institute facilities, belonged to the University.

Attorney Lopez reminded the two professors of the terms of their **employment contracts** which stated that intellectual property generated from the research activities in the University would be owned by the University, and that private consulting by professors with commercial interests would be limited to 8 hours per week.

While Dr. Borgarello thought that Mrs. Lopez was a little officious, she was in the same time impressed by how quickly she acted. Within 3 weeks, she arranged with a patent agent, that

the University was working with, to draft and file **3 patent applications for Smart Turbine**. The patent applications were filed with the National Intellectual Property Office, to prove protection and gain the priority date, with the view to apply shortly after the decision of the Evaluation Board with the World Intellectual Property Organization (WIPO) under the Patent Cooperation Treaty (PCT) in view of commercializing in leading renewable energy markets e.g. Europe, Asia and USA. **The name “Smart Turbine” was registered as well.**

IP Commercialization Options

After protection of invention Dr. Borgarello got a permission from University to present her work in Madrid before a packed audience, describing the functioning of the Smart Turbine and her new thin film, the performance, and energy savings. After the presentation, a small crowd formed around her asking questions and offering business cards.

Upon her return from Spain there were three letters waiting for her on the desk. The first was from a Spanish company, as she noted from the stamps and the return address. To her shock and horror, upon opening it, she saw the following words:

“Dear Mrs. Borgarello:
This law firm represents Energo....”

It was a demand letter, demanding that the University, the IAER, and Dr. Borgarello and Dr. Gonzi cease and desist from any further making, using or selling of the “patented technology”, etc. belonging to Energo, a Spanish/Danish joint venture. The letter enclosed what was called a “claims chart” which purported to show each claim of the Energo patent that was infringed by Smart Turbine. But— it was ridiculous— the claims had nothing to do with Smart Turbine and involved an ordinary compound silicon thin film and an entirely different turbine design, with no integration of the two systems! The letter ended by expressing confidence that an amicable business resolution could be reached upon negotiation, especially in light of Energo’s well-developed European distribution channels, and the advanced wind technology capabilities of Energo. It was proposed that based on the collaboration agreement, the University and Energo may further develop and commercialize Smart Turbine and become **joint venture partners**. Dr. Borgarello was so angry that she did not bother to read this sentence.

Dr. Borgarello opened the second letter, hoping it was some kind of apology by the Spanish-Danish joint venture company for its mistake. Instead, the second letter was from Professor Beale, the scientist who had invited her to the Madrid conference, stating that he had recently accepted a new and challenging position as Research Contracts Coordinator at Euroconsor, a large European energy consortium on renewable energy. Would she be interested in a very attractive **research services contract** whereby the IAER would be handsomely funded to perform selected research projects to support Euroconsor’s important new global energy initiatives?

Dr. Borgarello dropped the second letter on the floor, and opened the third letter. It was from an energy producer company, NEW Energy — she had heard of this company before. NEW Energy was a big company with a large capital surplus due to high energy prices, and its management was known for its business acumen and ability to introduce new technologies on the market. She read that NEW Energy had already accomplished few big projects in the area of renewable energy, and that they are trying to get dominant position on ten top markets. The letter was from the Chief Technology Manager, Dr. Martin , who said he had seen her impressive presentation on Smart Turbine at the Madrid conference and had followed her work over the years. He invited her to a meeting at NEW Energy corporate headquarters to discuss possibilities for collaboration to commercially exploit Smart Turbine. He said that his company lawyer, Mrs. Orolova would be there, and that the University should invite its legal counsel as well.

.Dr. Borgarello immediately invited Dr. Gonzi and legal council in her office. **What choices do they have? What are the risks associated with the choices?**



There was a possible settlement with Energo, which, despite first appearances, could result in an amicable business relationship involving **joint development and scientific collaboration**.

There was the choice of working with Professor Beale and Euroconsor in a research services arrangement, but Dr. Borgarello was reluctant once Mrs. Lopez explained that **research service agreements** often but not always provide that any IP resulting from the work belong to the party funding the research.

Then, finally, there was NEW Energy which had financial resources and business expertise in the area of renewable energy, and had made a serious invitation to **licensing negotiation**, as renewable energy and related technology became its strategic priority.

One month later, the two professors and Mrs. Lopez have agreed to meet and negotiate with – **PLEASE PROPOSE THE BEST PARTNER FOR KARPATIA UNIVERSITY** . Both sides have brought legal, marketing and technical staff to assist them. Both sides have signed **non-disclosure agreements prohibiting disclosure or improper use of confidential information**.

You are there. What deal can you negotiate?

Questions

1. What are the IP commercialization options for “Smart Turbine”?
2. Which one you consider as the best? Why?
3. Identify the business objectives for the Karpatia University
4. What is the leverage of the University?
5. What is the leverage of the partner you opted for – business experience, resources, presence on the market...?
6. What is the subject matter of the potential licensing agreement? Important – define very precisely!!!
7. Propose the scope of the rights that would correspond to the interest of both sides, and help Karpatia University and its negotiation partner to reach the win-win solution!