

XPRESS CASE STUDIES ON BARRIERS TO INVESTMENTS IN RENEWABLE ENERGY SOURCES

– NORWAY –

Description of the case

Based on interviews with two PA, one small municipality and one larger municipal enterprise that is responsible for school building in a large municipality.

The case is based on interviews with a larger municipal enterprise in a large municipality, and a small municipality. The chosen municipal enterprises are one of the larger public enterprises in Norway that have been involved in the breeze to use solar energy in public buildings, and they have built up competence in solar energy internally in the organization. The chosen municipality is, on the other hand, an example of how ordinary, small municipalities can manage to build competence and put in place solar energy projects within the limited financial and human resources. Hence, this case aims to describe how two municipalities of different sizes and with different amounts of resources have invested in RES.

- PA, municipal enterprise

The PA is a municipal enterprise responsible for school buildings in a large municipality. They build and develop new buildings or rehabilitate existing buildings.

We decided to contact the PA because they announced in 2018 an innovative competition on smart energy use and storage of solar power on buildings. First, the PA decided to arrange a dialogue conference, where the companies were invited to discuss possible solutions. A couple of days after the dialogue conference, the PA announced a planning and design competition at Doffin (The Norwegian database for public procurement), asking how they could utilize the surplus electricity in the best way.

The PA received ten different proposals for smart storage and the use of solar energy in its upcoming energy-plus-houses. The solutions were judged on environmental friendliness, energy efficiency, long-term economic profitability, scalability, and the possibility of practical implementation. The PA named five winners, and the winning proposals were for solutions around the use of fast charging of electric cars, used electric car batteries for storage, hydrogen solution, and smart energy management. The PA tested some of the proposed solutions at a school in the municipality, but they did not end up using any of the solutions there.

In the plan and design competition, the PA had a jury of internal members but also some professional experts. The jury consisted of one member an independent research organization, one from a research environment around solar cells, and the internal members were a



technical advisor, an environmental manager (the informant), one from the purchasing law department, and a real estate director.

The PA finds it important to have a dialogue with suppliers in the pre-tender phase, to prepare the market for the challenges, thoughts, and ideas they have. However, it takes time and resources, and the informant mentioned that they had experienced that one of their dialogue conferences were too general, the description was too wide, so it was difficult for the suppliers to understand. Hence, in this case it could have been wise to have another round and be more specific, but that is difficult when they must meet the deadlines.

Potential barriers for SMEs:

- PA require a lot of documentation regarding financial requirements, social dumping, environmental requirements, and so on
 - Large organizations could have a staff function that can serve projects with this type of information, while SMEs may not have the same structure and resources to manage to deliver the documentation
- In the future PA might require that their suppliers have an environmental certification from a third party, which can be difficult for SMEs

- *PA from a small municipality*

The PA is a rural municipality that uses both bioenergy and solar energy in their buildings. The last few years they have invested in solar cell systems at a nursing home, a school and have recently acquired a larger facility to be installed on the swimming pool building.

The municipality has a climate plan from 2009, and in the revised plan from 2018, they added a requirement that solar energy will be the main rule on their own buildings. To get solar energy on several of their municipal buildings, they have for several years asked the politicians to set aside 500,000 NOK each year for RES. This has made it possible for the municipality to add solar cells as a requirement where it has not been budgeted. In the last project, they were granted 2 MNOK to install a larger solar cell system on the swimming pool building.

Their first acquisition of solar cells was made in connection with the replacement of the water heaters in the nursing home, and with the extra funds (500,000 NOK) they got to purchase solar cells as part of the framework agreement for electrical services. The second acquisition was related to the building of a new school, and with the extra funds, they were able to add solar cells into the turnkey contract. For the last acquisition, they received offers from 9 suppliers that wanted the task of setting up solar cell facilities on the swimming pool building, a bigger plant than the other two solar cell systems.

The municipality has spent a lot of time and resources on increasing its expertise in solar cells and is part of the solar energy cluster. They want to learn from their experiences and find out how municipalities can more easily acquire solar cell systems in the future.



Analysis of the current situation

a. Sustainability strategies, energy-related strategies:

The small municipality had an early strategic anchoring for the use of bioenergy, but not for solar energy. The municipality still succeeded in getting a solar energy project in place, and when the climate plan was revised in 2018, specific goals and measures were introduced for solar energy. In addition to the climate plan, it has been crucial for the municipality to set aside some money earmarked for RES in the financial plan. During the period from 2014 to 2018, the environmental advisers persuaded the politicians to set aside NOK 500 000 annually for solar energy. This made it possible for the municipality to install solar cell systems in buildings where it was not a part of the budget, and the municipality has until now acquired systems on three of their municipal buildings.

The municipal enterprises aimed to reduce their energy consumption by 17% at all the schools in their municipality by 2020, and all future school buildings should have a climate profile where the use of solar cells and heat pumps is central. The energy-related strategies are anchored in their environmental and energy strategy. The document states that municipal enterprises shall be leaders in energy-efficient operations, and they shall reduce the environmental impact through procurement activities by setting relevant environmental requirements for suppliers and deliveries. Further, the PA shall focus on life cycle analyses to promote a long-lasting environmentally friendly solution. They also have a criterion that all roof surfaces should be assessed for the use of energy production, which has led to installations of solar cells on several new buildings in the municipality.

Both PAs have sustainability strategies with specific goals regarding RES. They have in common that they focus on building internal RES competence and are actively participating in RES environments and clusters. For the small municipalities, there has been no budget for RES in their construction projects, and the introduction of the solar energy system has depended on individuals in the municipality who have built expertise and convinced politicians to earmark money for solar cell systems.

b. PP strategy

Both PAs focus on making green purchases and emphasize environmental criteria in their procurements. In the municipality enterprises, they must emphasize the environment between 20 and 30 percent in procurement over a certain value. However, the informant from the large PA finds it difficult to emphasize the environmental criteria because one supplier may have left out a machine that they cannot get emission-free in their tender, while another supplier may be honest and add this machine. Then there will be a discussion on whether they compete on an equal basis, and the informant would rather use high minimum requirements.

The two PAs have used different public procurement strategies for the procurement of RES in their buildings. The municipal enterprise is as earlier mentioned a big organization that builds and renovates several school buildings; hence the focus has been on finding innovative solutions for the energy use in their building. Among other activities, the large PA has conducted a design competition on smart energy use and storage of solar power of their school building and used resources to create a dialogue with the suppliers. The small



municipality does not have the same resources to do innovative procurement activities. However, they have been able to acquire RES through thinking creatively. Their first acquisition of solar cells was made in connection with the replacement of water heaters in a nursing home, and with the extra fund (500 000 NOK), they were able to purchase solar cells from a local SME as part of the framework agreement for electrical services. The two other acquisitions of solar cell systems were made through turnkey contracts, which is the most common way for municipalities when building new buildings.

c. PP and supplier engagement:

The municipal enterprise is one of several partners in a national programme for supplier development, a program that is set up to accelerate innovations and development of new solutions through the strategic use of public procurement. The partners involved in the program are encouraged to communicate to the market, invite for dialogue and challenge themselves to come up with smart solutions. In 2018, the enterprise announced an innovative competition on smart energy use and storage of solar power on their school buildings, as part of the programme for supplier development. First, the PA decided to arrange a dialogue conference where the companies were invited to discuss possible solutions. A couple of days after the dialogue conference, the PA announced the design competition at Doffin (the Norwegian national notification database for public procurement), asking how they could utilize the surplus electricity in the best way. They received ten different proposals, and the solutions were assessed by a jury consisting of both internal and external professionals. The PA named five winners, and the winning proposals were for solutions around the use of fast charging of electric cars, used electric car batteries for storage, hydrogen solution, and smart energy management. The PA tested some of the proposed solutions at a school building in their municipality, but they did not end up using any of the solutions there.

The small municipality has not facilitated dialogue with suppliers in the pre-tender phase. On the other hand, the municipality has been active in the solar cell cluster and experience that they have a good overview of the market and in this way achieved the benefits of dialogue. However, as the solar cell market expands, it may be beneficial for them to invite the suppliers for dialogue in a future pre-tender phase. The large municipal enterprise points out that they find it important to have a dialogue with the suppliers to prepare the market for challenges, thought, and ideas they have. Even though it can be resource-intensive, the informant explained that it is useful to make suppliers understand what they need and to enable innovative solutions. On the other hand, they do not always have the opportunity to conduct a dialogue with the suppliers as they have deadlines they have to meet.

d. PP and SME

Neither of the PAs has a strategy for supporting SMEs (other than for framework agreements) in public procurement. However, SMEs has been among the winners of tenders.



Barriers and drivers

The PAs believe there are several barriers for SMEs to participate in public procurement. First, PA requires a wide range of documentation regarding financial requirements, social dumping, environmental requirements, and so on. Large organizations could have an administration function that can serve projects with this type of information, while SMEs may not have the same structure and resources to do the same. Second, the municipal enterprise would in the future like to require that their suppliers have an environmental certification from a third party, which can be a new barrier for SMEs.

Regarding the drivers or success factors for SME engagement, both PAs believes in using dialogue. The small municipality has good experience of building internal competence and getting involved in the RES market, for example through solar energy clusters. The municipal enterprise has also increased their internal competence within RES and had a good experience with the use of idea competition to create innovative solutions and involve SMEs.

Summary and Discussions

The two PAs are examples that show that municipalities regardless of size could be able to invest in RES. However, it requires commitment, expertise, and political/ financial support. The small municipality has been creative and been able to bring in RES through existing framework agreements with a local SME. The large municipality, as a major municipal enterprise has taken the step further and used innovative PP activities to find new and improved RES solutions, which has also engaged SMEs.

