



## 2021 TOP 100 GOOD PRACTICE STORY

**Title of the Story:** **The Use of Renewable Energy to Reduce Carbon Emissions at Bitez Destination**

**Destination Name:** Bitez (in Bodrum Region)

**Country:** Turkey

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**Position:** Sustainability Coordinator

**Nomination Category:** *(Please check the boxes that indicate the focus of your story)*

- Localizing the destination supply chain
- Decarbonizing the destination supply chain
- Culture & Communities
- Environment & Climate
- Nature & Ecotourism
- Tourism Reset & Recovery

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### Issues faced

As Bodrum Municipality, we are conscious of the existence of the global climate crisis. We think that the best way to deal with global warming in a country can only be the crisis prevention policies that local governments will make decision on this issue. Our priority is to take all possible precautions to prevent the people living in Bodrum from being harmed by the effects of climate change. Within this context, the carbon emission rate of Bodrum poses a problem. There are greenhouse gas emission from tourism, agriculture, small-scale industry, hotels and residences in Bodrum. As Bodrum Municipality, we aimed to reduce Bodrum's carbon-footprint by 40% within ten years. In order to achieve this goal, we took the first step in our Bitez destination region. We set out to provide the energy of 52 environmental lighting poles in our destination area from 100% solar panels.

### Methods, steps and tools applied

First of all, a team of engineers was organized by destination management to conduct a feasibility study. This team calculated how much electrical energy the existing lighting poles consume. The amount of carbon emission was calculated from the results. According to these calculations; the existing poles consume 10424 kwh of electricity and cause 4482 tons of carbon dioxide emission per year.

Teams of engineers worked on the design of solar powered electric poles to reduce carbon emissions to zero. The company that will produce the panels that will meet the values obtained as a result of design and install them on the field was researched. The company was found and the panel production process was completed. The company that will implement the application in the field has started to work. With a successful logistics, the panels were taken down the field. The assembly process has started.

It took about seven days for the transformation of 52 environmental lighting poles fed from the network into a solar-powered system. The engineering team was present in the field as the project controller to prevent technical problems and to prevent accidents that may occur during the construction of solar panel assembly.

The project was completed and Bitez destination started to shine with environmental lighting poles with zero carbon emission value.



#### Key success factors

- **Successful Engineering Management:** Bodrum Municipality Engineering Team, established with the decision of the destination management, ensured that the technical studies were carried out in a planned and disciplined manner. The experience of Bodrum Municipality Engineering Team on renewable energy, studies and research on carbon emission reduction have formed the basis of this work.
- **Success in working with the private sector:** The project was carried out with the successful communication and technical information flow between the destination management, Bodrum Municipality Engineering Team and the company that applied the solar panel in the field.
- **Occupational health and safety success:** Disassembling the bulbs of lighting poles, installing solar panels and making electrical connections for installation was a dangerous job in many respects. In order to do this job in a healthy way, Bodrum Municipality and the destination management took the necessary precautions and ensured that the operation was completed successfully and without any occupational accidents.

#### Lessons learned

The problems encountered while operating 52 environmental lighting poles in the destination area with solar energy are as follows:

- Because the lighting poles were very old technology it was hard to design a suitable solar panel.
- It was investigated how many hours it can illuminate the environment by performing field tests with the solar panels available in the sector.
- During the pandemic period, the central administration decided to curfew from 9 pm to 5 am. The tests of whether the environmental lighting poles were working effectively had to be done in the evening. Since our engineers often visited the field to control late at night, it was required to take permission from the central administration.
- During the pandemic period, working with the surgical mask by the following the distance rules in the field forced both the engineer team and the assembly team.

#### Results, achievements and recognitions



- Solar panels were installed on 52 environmental lighting poles in destination area and they were enabled to operate with solar energy.
- Each pole provides 12 hours of illumination per a day.
- 0.12kw/h electricity is produced per day with the panel on each pole.
- While the CO2 value resulting from 52 environmental lighting poles was 4482 tons per year, this value became 0 with the conversion.

Bodrum Municipality has applied to a very important academic award program, the results of which will be opened in June, with the use of renewable energy to reduce carbon emissions in the Bitez Destination campaign;

Mugla Sıtkı Koçman University, Sustainable Tourism Award of the Year in the Award Program for Those Who Add Value to Mugla (2021).

#### Additional references

<https://youtu.be/cNDZon4NaT8>

[https://www.instagram.com/tv/CPdWQxQDDST/?utm\\_source=ig\\_web\\_copy\\_link](https://www.instagram.com/tv/CPdWQxQDDST/?utm_source=ig_web_copy_link)

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