



The project funded by
European Union



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Ho Chi Minh, 25/7/2019



**DSED project & activities towards development
of rooftop solar PV projects in Danang**





I. POTENTIAL OF SOLAR ENERGY DEVELOPMENT IN DANANG

- ☐ With average radiation intensity: **4.89 kWh/m²/day**, ranking 5th among 16 provinces with huge potential to develop this clean solar energy;
- ☐ By 06/2019: **382 customers** installed rooftop solar PV systems with total installed capacity of **more than 2.4 MWp**.

DANANG TOWARDS "ENVIRONMENTAL CITY"

THE PROJECT ON DEVELOPMENT OF SOLAR ENERGY IN DANANG (DSED)

- 🌍 **GRANT CONTRACT** signed between DECC and EU: **23/12/2016**.
 - 🌍 **MAIN OBJECTIVE:** to contribute to increase accessibility to clean energy resource in Da Nang on sustainable development basis.
 - 🌍 **Implementation duration:** 1/7/2017 (40 months)
- 03 components:**
- ❖ Regulatory support to promote development of solar energy
 - ❖ Pilot installation of solar energy system in some selected facilities
 - ❖ Capacity building and exchange knowledge on development of solar energy



Regulatory support to promote development of solar energy

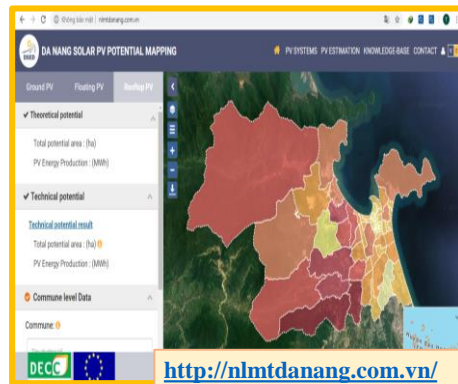


SOLAR ENERGY POTENTIAL MAPPING FOR DANANG

Solar PV potential
(Theoretical & Technical Potential): Ground PV; Floating PV; Rooftop PV

Update existing installed solar power projects
to 30/6/2019 in Danang

Calculation tool
to a potential solar PV project with generation output, revenue, payback period.



➔ **Application Works on Solar Energy Potential mapping:**
Publicly released and linked to Danang DOIT and Danang DOST's webpage



Regulatory support to promote development of solar energy

GUIDING MANUAL ON DEVELOPMENT OF ROOFTOP SOLAR PV PROJECTS IN VIETNAM

(with installed capacity below 01 MWp)



Access to adequate and easy-to-understand information on administrative procedures and steps to develop the project with various scale



Compatible solar energy technology application and related technical issues for development of solar PV rooftops



Updates of legal documents and policies; local points of the central and local agencies



Access to some financial support programs such as ESCO model and related information



- Completed the final deliverables
- Widely release the publication of this Manual in the mid-August, 2019



Regulatory support to promote development of solar energy



Detailed assessment and survey of solar energy potential application in some selected industrial sectors in Danang

05 selected industrial sectors:

- ❖ Breweries, soft drink, and dairy
- ❖ Food processing
- ❖ Textile
- ❖ Pharmaceuticals
- ❖ Pulp and paper



- Determined the industrial processes that can use solar energy to substitute fossil energy or electricity.
- Cost analysis of typical models to consider the possibility of commercial solar energy application for selected industrial sectors.
- Studied and proposed solar technologies that are suitable for selected industries.

❖ Completed and widely circulated



Regulatory support to promote development of solar energy

DEVELOPMENT OF TECHNICAL STANDARDS ON SOLAR PV MODULE SAFETY QUALIFICATIONS



Part 1- Testing



Part 2- Construction

- Final drafts on two technical standards completed by the Consultant and submitted to the Ministry of Science and Technology (MOST) by Vietnam Standards and Quality Institute (VSQI);
- Expected to issue these standards in the end of July, 2019

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Capacity building and exchange knowledge on development of solar energy

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S Dissemination results to raise awareness on benefits of rooftop solar power

E

Organized 02 training courses& site visits to have best practices on application of solar power

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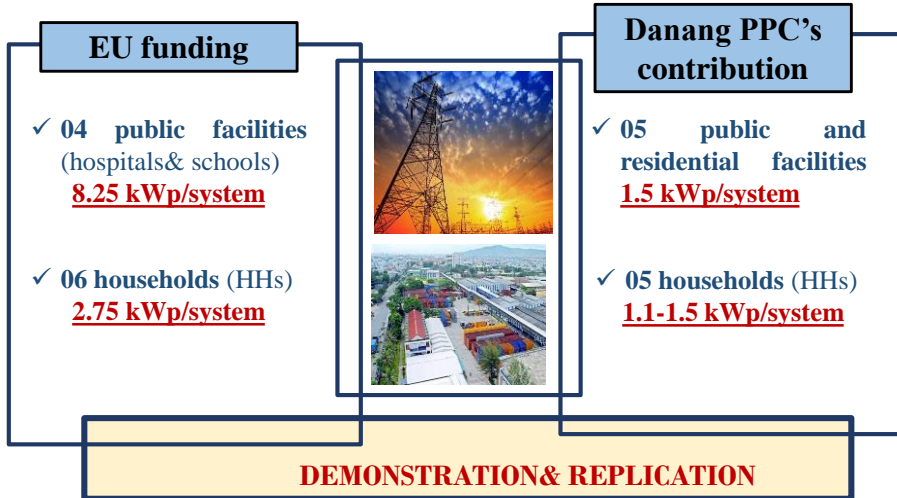
The DECC's showroom: well-equipped with solar energy using application technology and 02 solar energy system (01 the grid-connected system><01 battery back-up system) for



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Pilot installation of rooftop solar PV systems in public facilities and households



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Pilot installation of rooftop solar PV systems in public facilities and households

Selection criteria to public facilities and households

- ✓ Location;
- ✓ Status of infrastructure and rooftop;
- ✓ Shadowing in the area to install solar PV system;
- ✓ Monthly average power consumption;
- ✓ Contribution of counterpart fund to repair/reinforce the roof and operation and maintenance;
- ✓ Willingness to share information and integrate activities to enhance awareness on solar energy



Public facilities:

- ✓ All solar energy systems: operated from 05/2019;

Households:

- ✓ All solar energy systems: operated from 06/2019

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Pilot installation of rooftop solar PV systems in public facilities and households

- ❑ **PUBLIC FACILITIES (8.25 kWp)**
- ❑ **HOUSEHOLDS (2.75 kWp)**



Danang Oncology Hospital



Danang Hospital



Hoang Dieu Secondary school



Vo Thi Sau Primary School



06 households

**GENERAL INFORMATION
(EU FUNDED DSED PROJECT)**

- Total installed capacity: **49.5 kWp**
- Total generation output: **72,270 kWh/year;**
- Total cost savings/year:
+ **26 million dong/each system (8.25 kWp) in public facilities;**
+ **8,6 million dong/each system (2.75 kWp) in household;**
- The payback period:
+ **8 year/ system in the pubic facilities;**
+ **6 years/system in the household**
- GHG emission reduction: **34,96 tons CO2/year.**



Pilot installation of rooftop solar PV systems in public facilities and households

**THE ROOFTOP SOLAR PV SYSTEMS
INSTALLED IN HOSPITAL AND SCHOOLS**



“Luckily, with EU’s funding from DSED project, we can light up the school and save certain electricity cost. In addition, I would like to share benefits of application of solar energy to my own students which contribute to their own green future”
As Ms. Thu Ha, Rector of Hoang Dieu Secondary School expressed.



“The installed solar energy system has provided electricity to the lighting system in the hospital. After installing this pilot solar energy system, we shall take into account expansion with bigger installed capacity to fully use large rooftop area and provide more electricity for the hospital”
As said by the leader of Danang Oncology Hospital



Pilot installation of rooftop solar PV systems in public facilities and households

- ❑ DSED Project has been implemented in the provincial level but have its own pervasiveness
- ❑ This small-scaled project shall become good example for replication to use more solar energy into practice
- ❑ Danang shall be the pioneering city to develop rooftop solar PV projects in the Centre and DECC shall become a connecting bridge to match-match and promote solar energy development in Danang;
- ❑ Next coming time: (i) More focus on visibility and capacity building; (ii) proposal to Danang PPC to support development of rooftop solar PV systems across the city

“ SUSTAINABLE SOLAR ENERGY FOR A GREEN FUTURE”



Thank you



Please contact with us:

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