

# Teaching module 6. Environmental projects management

## 6.3 Good Practice Examples

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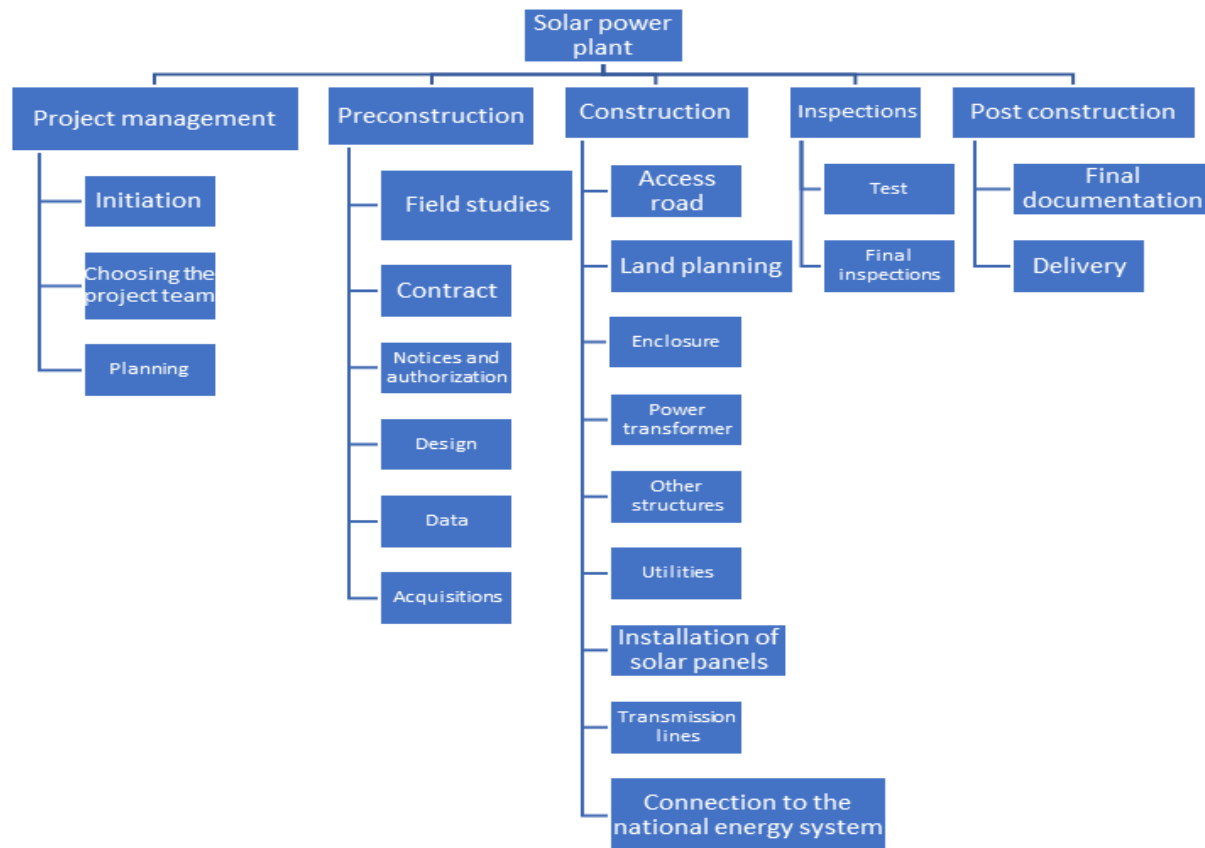
# Good Practice Examples— environmental projects

- Project regarding the construction of a solar power plant in Avram Iancu commune;
- Ecological reconstruction project through afforestation of degraded agricultural land in Fălcium commune, Vaslui county;
- Sewerage and treatment plant in Hulubești commune, Dâmbovița county;

## Good Practice Example no. 1 Project regarding the construction of a solar power plant in Avram Iancu commune

- a project aimed at building a 3 MW photovoltaic plant in Avram Iancu commune in Bihor county, northwestern Romania.
- the power plant will use thin-film photovoltaic modules (a technology that generates up to 10% more power than polycrystalline) and will occupy an area of 6 hectares.

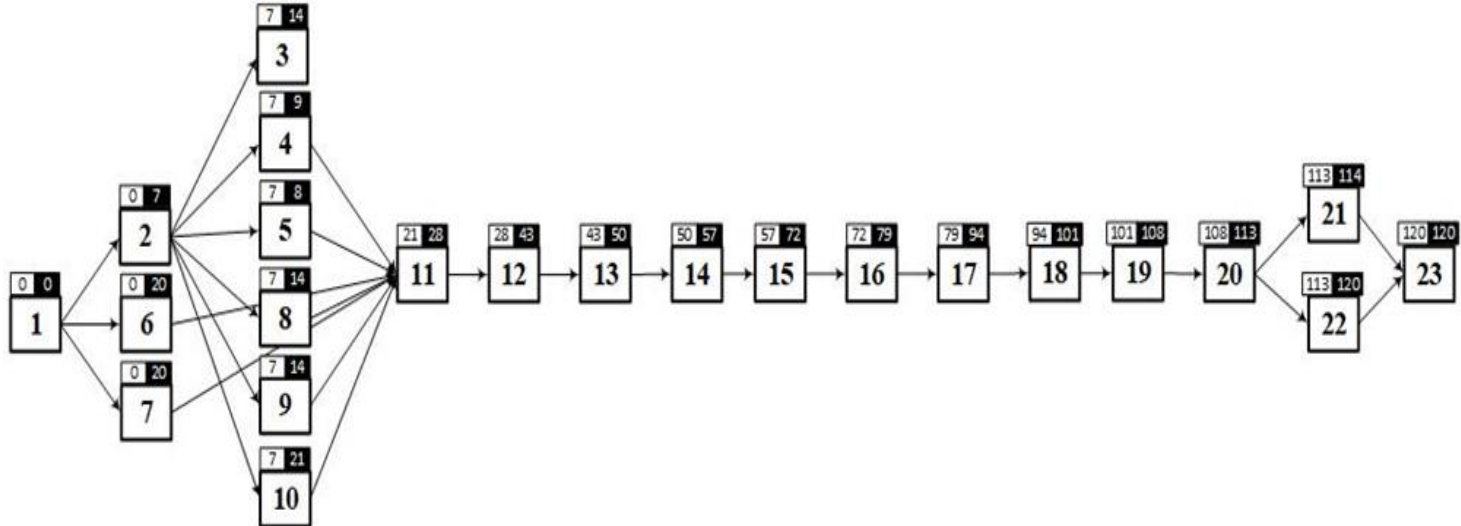
# WBS for a project to build a photovoltaic plant



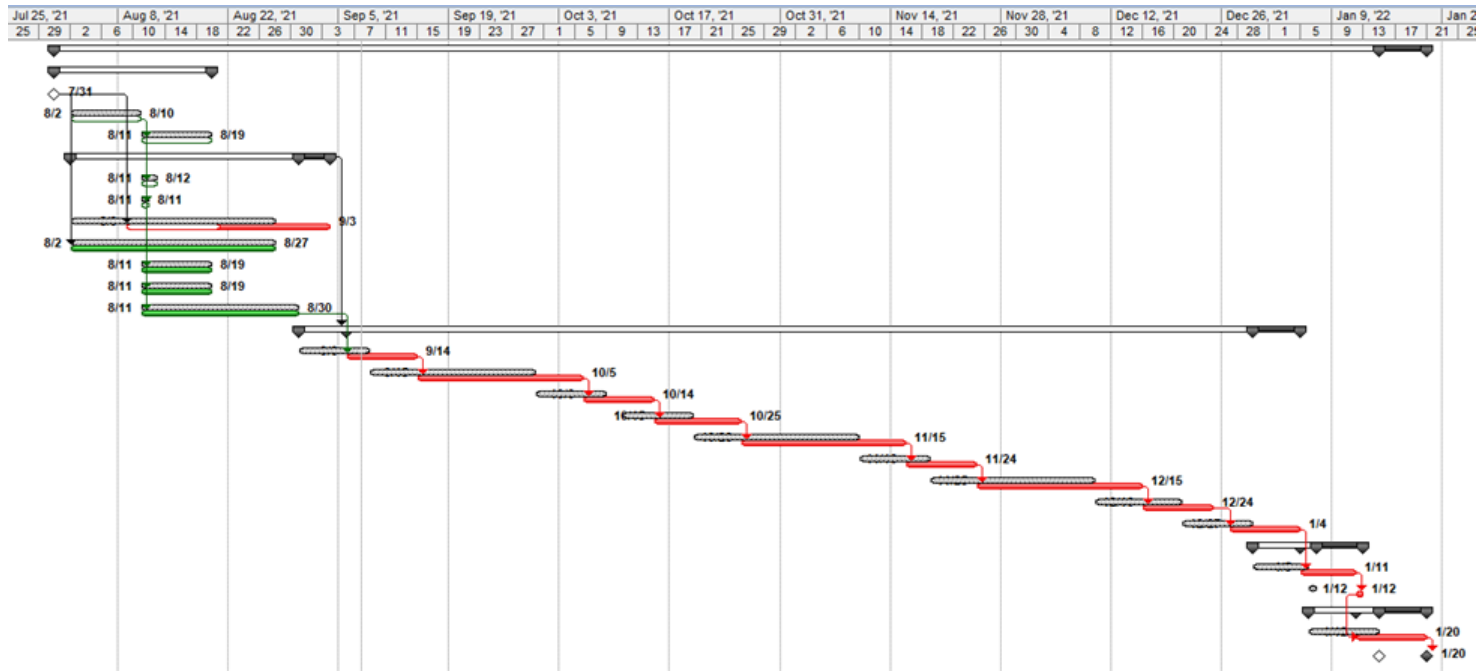
## Task list for a photovoltaic plant construction project

Activity ID	Activity	Estimated duration	Predecessor activity
1	Initiation	0 days	-
2	Choosing the project team	7 days	1
3	Planning	7 days	2
4	Field studies	2 days	2
5	Contracting	1 day	2
6	Construction permits	20 days	1
7	Other legal notices	20 days	1
8	Design and engineering	7 days	2
9	Consultancy	7 days	2
10	Acquisitions	14 days	2
11	Access road	7 days	4, 5, 6, 7, 8, 9, 10
12	Landscaping	15 days	11
13	Enclosure	7 days	12
14	Power transformer	7 days	13
15	Other structures	15 days	14
16	Utilities	7 days	15
17	Installation of solar panels	15 days	16
18	Transmission lines	7 days	17
19	Connection to the national energy system	7 days	18
20	Tests	5 days	19
21	Final inspections	1 day	20
22	Final documentation	7 day	20
23	Delivery	0 days	21, 22

# Network diagram for a photovoltaic plant construction project



# Gantt chart with baseline schedule and actual activity durations for a photovoltaic plant construction project



# Simple budget for a photovoltaic plant construction project

Activity ID	Activity	Estimated cost
1	Initiation	0 €
2	Choosing the project team	1,000 €
3	Planning	2,500 €
4	Field studies	54,080 €
5	Contracting	55,000 €
6	Construction permits	2,500 €
7	Other legal notices	2,500 €
8	Design and engineering	139,960 €
9	Consultancy	12,540 €
10	Acquisitions	13,007,950 €
11	Access road	840,000 €
12	Landscaping	22,800 €
13	Enclosure	35,740 €
14	Power transformer	724,000 €
15	Other structures	657,090 €
16	Utilities	111,576 €
17	Installation of solar panels	453,000 €
18	Transmission lines	110,100 €
19	Connection to the national energy system	529,540 €
20	Tests	55,000 €
21	Final inspections	124 €
22	Final documentation	5,000 €
23	Delivery	0 €
<b>TOTAL</b>		<b>16,824,000 €</b>



## Example of an earned value report generated by MS Project for a photovoltaic plant construction project

Task name	Planned Value - PV (BCWS)	Earned Value - EV (BCWP)	AC (ACWP)	SV	CV	EAC	BAC	VAC	Aug 8, '21					Aug 22, '21			
									2	6	10	14	18	22	26	30	
<b>-PHOTOVOLTAIC PLANT CONSTRUCTION PROJECT</b>	14,122,590.00 €	113,830.00 €	114,550.00 €	4,008,760.00 €	(720.00 €)	6,930,415.53 €	6,824,000.00 €	(106,415.53 €)									
<b>-PROJECT MANAGEMENT</b>	3,500.00 €	3,500.00 €	3,500.00 €	0.00 €	0.00 €	3,500.00 €	3,500.00 €	0.00 €									
Initiation	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €									
Choosing the project team	1,000.00 €	1,000.00 €	1,000.00 €	0.00 €	0.00 €	1,000.00 €	1,000.00 €	0.00 €									
Planning	2,500.00 €	2,500.00 €	2,500.00 €	0.00 €	0.00 €	2,500.00 €	2,500.00 €	0.00 €									
<b>-BEFORE CONSTRUCTION</b>	13,274,530.00 €	110,330.00 €	111,050.00 €	64,200.00 €	(720.00 €)	361,157.95 €	274,530.00 €	86,627.95 €									
Field studies	54,080.00 €	54,080.00 €	56,800.00 €	0.00 €	(2,720.00 €)	56,800.00 €	54,080.00 €	(2,720.00 €)									
Contracting	55,000.00 €	55,000.00 €	53,000.00 €	0.00 €	2,000.00 €	53,000.00 €	55,000.00 €	2,000.00 €									
Construction permits	2,500.00 €	1,250.00 €	1,250.00 €	(1,250.00 €)	0.00 €	2,500.00 €	2,500.00 €	0.00 €									
Other legal notices	2,500.00 €	0.00 €	0.00 €	(2,500.00 €)	0.00 €	2,500.00 €	2,500.00 €	0.00 €									

## Good Practice Example no. 2 – Ecological reconstruction project through afforestation of degraded agricultural land in Fălcium commune, Vaslui county

- the main goal of the project was the ecological reconstruction of the land using the most accessible options, more precisely the increase of the forest area necessary for the protection of soils, water and microclimate.
- actions aimed at reducing the destruction generated by man (deforestation) and nature (alluvium) as well as increasing the retention capacity were considered.

# Project objectives

- securing resources for the production of biomass and high-quality wood.
- reducing pollution;
- stimulate and development of biodiversity.

# Project results

- reducing the degree of soil erosion ;
- reducing the degree of pollution by increasing the volume of oxygen generated;
- retaining increased amounts of carbon dioxide.

# Project-specific risks

- The macro-level risks;
- Economic risks;
- Technical risks;
- Environmental risks.

## The risk register for the project of ecological reconstruction through afforestation of agricultural land

No.	Description of the risk	Project activity affected	Probability	Impact (euro)	Expected value	Response actions
1.	The long period of obtaining the first economic results	Exploitation of the project	50%	10000	5000	Starting actions to obtain the first economic results at the beginning of the exploitation period
2.	Too high implementation efforts compared to the period of obtaining the first economic results	Project implementation	20%	10000	2000	Introduction of a clarification period for the offers received
3.	Non-adaptation of the planted trees to the new environment	Exploitation of the project	10%	5000	500	The choice of afforestation solutions/types of trees whose adaptation to the microclimate of the area should be validated in the case of previous forestry operations 1.Choosing executors with experience in performing maintenance works
4.	Maintenance work that is performed improperly	Project maintenance	20%	10000	2000	2. Selection of a specialist consultant to participate in the reception of the works.

## The main benefits obtained from the implementation of the project

- Reducing emissions of carbon dioxide and other greenhouse gases;
- Combating global warming and reducing soil and water pollution;
- Generation of material resources and renewable energy resources;
- Aesthetic appearance and recreation space.

## Example of good practice no. 3 - Sewage and treatment plant in Hulubești commune, Dâmbovița county

- By building a sewage system and a sewage treatment plant at the level of Hulubești commune, Dâmbovița county, the aim was to reduce the impact on the environment generated by the activities carried out by the community in the previously designated space;
- In order to ensure a significant favorable impact for the improvement of the quality of the environment, the project considered carrying out some sewerage works and building a sewage treatment plant.



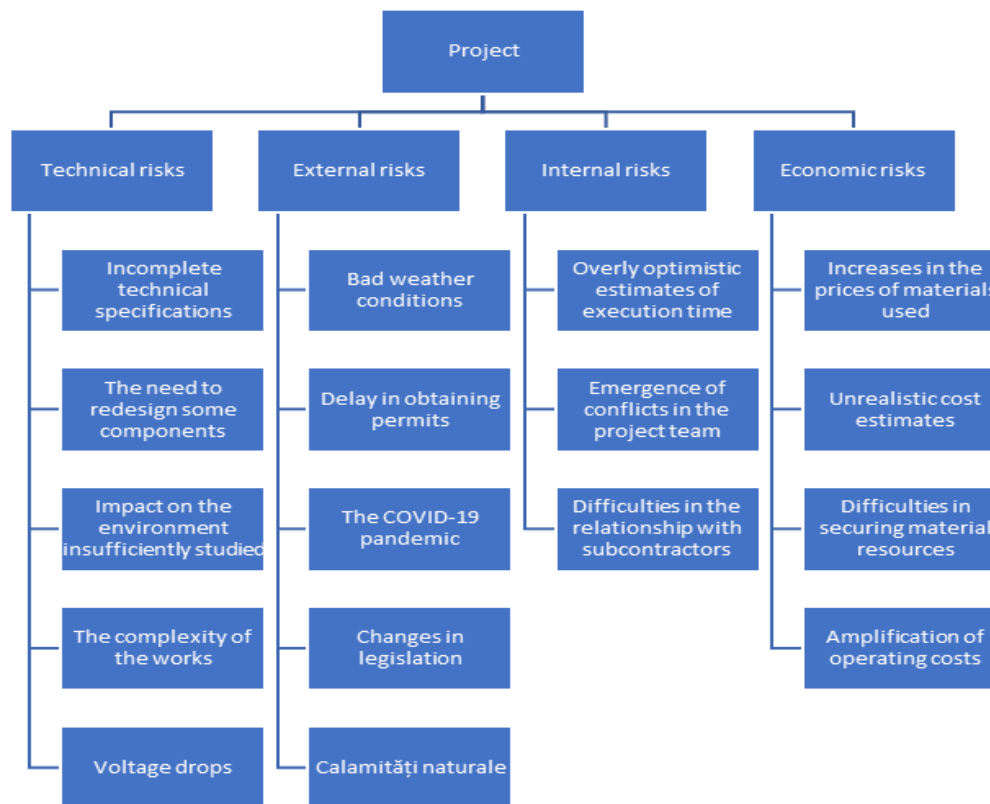
## The material resources used in this project (resources list)

- PVC sewer pipes of different sizes depending on the intended section;
- PEID discharge pipes;
- Visiting dorms that require standard building materials;
- Connecting fireplaces that require standard construction materials;
- Sewage pumping stations;
- The treatment plant;
- Manifolds for discharge pipes.

## The main categories of risks that can affect the project

- **Technical risks** – which originate from the processes of designing and carrying out project activities;
- **Risks external to the project** - arising from the project's relationship with the environment;
- **Risks internal to the project** - what are the sources of the project team, the planning process and the relationship with subcontractors;
- **Economic risks** – which come from the initial cost estimates, from the budgeting process and the evolution of prices and the availability of the material resources used.

## The work breakdown structure of the risks for the construction of a sewage system and a treatment plant in Hulubești commune



*Thank you!*



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