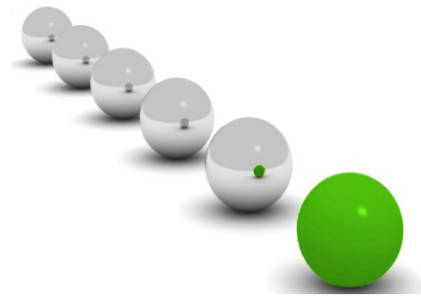




Academiejaar: 2013 - 2014

Mikel Vergara Arrieta, student Hogeschool PXL
 Gwen Vanheusden, Hogeschool PXL
 Wim Vandormael, Hogeschool PXL



SUSTAINABLE ENERGY REDUCTION, PRODUCTION AND MANAGEMENT AT PXL-TECH WITH A PHOTOVOLTAIC INSTALLATION

Research question

Is it profitable a photovoltaic system for PXL-Tech building?



Goals

Save energy and money

Energy independence

Became an environmentally friendlier building

Model for other universities

Method

Literature review → PXL-Tech building analysis
 → Electric consumption analysis

Choice of PV panels
 Choice of inverters
 Choice of cables
 Solar tracker analysis
 Final design



Cell material	Required PV area for 1kW _p	
Mono-crystalline High performance cells	7m ² -9m ²	
Polycrystalline	7.5m ² -10m ²	
Copper indium diselenide (CIS)	9m ² -11m ²	
Cadmium telluride (CdTe)	12m ² -17m ²	
Amorphous silicon	14m ² -20m ²	

Results

	Investment	Installed n° of panels	Installed kW _p	Saved money (350000 kW·h ·provided %·15cent€ kW·h) (€/year)	Amortization (investment/saved money) (years)
MONOCRYSTALLINE PANELS	520.792,92 €	1064	250,04	31.880,10 €	16
POLYCRISTALLINE PANELS	295.802,12 €	763	190,75	24.320,63 €	12

BACHELORPROEF ELEKTROMECHANICA