

## PV-INVEST GMBH (LTD.)

### 1. KEY DATA

COUNTRY	<b>Austria, Europe</b>	
INDUSTRY	<b>Energy</b>	
SECTOR	<b>Secondary Energy</b>	
EXCHANGE	<b>Vienna Stock Exchange</b>	
ISIN	<b>Bonds: AT0000A1YY14, etc.</b>	
MARKET CAPITALIZATION	-	-
TOTAL ASSETS	<b>EUR 72 million</b>	2018
TURNOVER	<b>EUR 14 million</b>	2018
EMPLOYEES	<b>18</b>	2018
FISCAL YEAR	<b>1/1 - 31/12</b>	
ADDRESS & WWW	<b>A-9020 Klagenfurt, Austria, Europe Lakeside B07 www.pv-invest.com</b>	

### 2. EXCLUSIONARY SCREENS

ARMAMENT	<b>No</b>	NUCLEAR ENERGY	<b>No</b>
GMO's (genetically modified organisms)	<b>No</b>	ADDICTIVE DRUGS	<b>No</b>
GAMING	<b>No</b>	OTHERS	<b>No</b>

### 3. STAKEHOLDER & PRODUCT SCREENS

EMPLOYEES	<b>ba</b>	PRINCIPLES & STRATEGIES	<b>B+</b>
SOCIETY	<b>A-</b>	MGMT. SYSTEMS & ORGANISATION	<b>ba</b>
CUSTOMERS	<b>ab</b>	PRODUCTS & SERVICES	<b>ab</b>
MARKET PARTNERS	<b>ba</b>	PROGRAMMES, ACTIVITIES & ACHIEVEMENTS	<b>b</b>
INVESTORS	<b>bc</b>		
ENVIRONMENT	<b>ab</b>		

### 4. OVERALL SUSTAINABILITY RATING

RATING	A+	A	A-	B+	B	B-	C+	C	C-	EX
INDICATIVE RATING	a			b			c			NR
	<b>ab</b>			bc						
				ba						

PREVIOUS RATING -  
DATA RATE **56%**



### 5. PROFILE

PV-INVEST GmbH, which is headquartered in Klagenfurt, Austria, Europe, is an investment company that operates in the field of renewable energy, holds assets and carries out projects in various countries in Europe and the MENA Region (Middle East and North Africa).

The company has two major business segments, (1) holding of renewable energy assets and (2) project development for photovoltaics. The group primarily acts as investor and consists of about 40 companies.

The two General Managers are shareholders. The activities are funded by loans, civic investment schemes and bonds. The company is characterized by a strong orientation towards sustainable investments.

Exclusionary screens relating to sustainability are not affected.

The company has not defined principles concerning social responsibility yet but has a profound implicit orientation towards sustainability in its business strategy.

As the company is small-sized, there is no systematic sustainability management. Several relevant issues are not addressed systematically yet.

Programmes, activities and achievements seem to be partly in accordance with the company's own principles and goals and partly with general requirements placed on a sustainable company. Deficits were identified as far as the equity ratio is concerned. A sustainability report has not been published yet.

The company's services are essential for the transition to a sustainable energy system with positive impacts on the climate and society as whole. The fields of operation remain the most decisive factor leading to a sustainability rating that is significantly above-average.

# METHODOLOGY

## 1. rfu

rfu (Mag. Reinhard Friesenbichler Unternehmensberatung / Business Consulting), which was founded in 1997, is a specialist in sustainable investment and management. We support institutional investors and companies in the development and implementation of sustainability focused investment and business strategies. Our research is brought into the investment policy of portfolios with an overall volume of several billion Euro. Labels and awards (e.g. Austrian Environmental Label) for products on the basis of our concepts demonstrate its credibility, and such indices as the Austrian Sustainability Index VÖNIX or the Eastern European Index CECE SRI EUR show the positive performance effect of our research.

## 2. THE SUSTAINABILITY MODEL

**BACKGROUND** The “technological heart” of our activities is the rfu Sustainability Model, which has its origin in the 1990’s. Continual optimization of the methodology, criteria and processes born by inputs from research projects as well as practice have helped to create a mature tool for external rating of corporate sustainability. The model comprises two filtering levels: (1): exclusion criteria and (2) stakeholder and product criteria.

<b>EXCLUSION CRITERIA</b>	Exclusion criteria include activities, technologies and practices that are incompatible with the principles of sustainability.	> Armament	> Other activities / practices with strongly adverse ethical / social / ecological impacts (e.g. coal mining, violations of human rights)
	By way of default, six groups of exclusion criteria will be used. Besides, these criteria can be extended specifically to the customers, if necessary.	> Nuclear energy > Addictive drugs > Gaming > GMO’s (genetically modified organisms)	

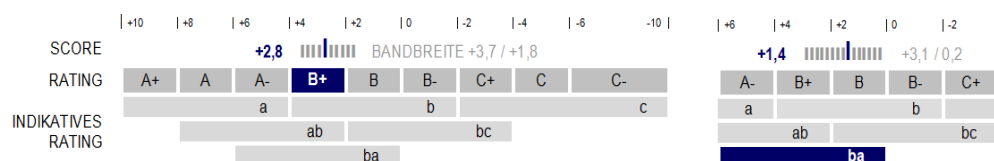
**STAKEHOLDER & PRODUCT CRITERIA** The stakeholder and product criteria are based on the stakeholder model, which is supplemented by a value chain analysis of the products or services. These criteria are embedded in a matrix, which is made up of four managerial levels and six stakeholder groups:

Each intersection of the matrix forms a rating field, to which criteria are assigned. On the whole, the rfu Sustainability Model includes about 100 single criteria, which are operationalized by approx. 400 quantitative and qualitative indicators.

- > Principles and strategies
- > Management systems & organisation
- > Programmes, activities & results
- > Products & services
- > Employees
- > Customers
- > Investors
- > Society
- > Market partners
- > Environment

**WEIGHTING & AGGREGATION** Weighting of the single criteria is derived from their relevance for the respective company (e.g. based on the sector, the regional structure and the company’s position in the value chain).

The features of the criteria will be aggregated to an overall rating on a scale from -10 to +10 over several levels and transformed into a rating on the scale from C- to A+ (please refer to the example given on the left).



The possible fluctuation range resulting from a reduced data rate of the score will be acquired (“bandwidth” in the examples). If it covers more than one rating class, it will lead to an indicative rating, which is marked by small letters (example given on the right).

## 3. FURTHER INFORMATION

A detailed presentation of the rfu Sustainability Model can be found on our website [www.rfu.at](http://www.rfu.at) or can be downloaded at [www.rfu.at/modell/](http://www.rfu.at/modell/).

## PV-INVEST GMBH (LTD.)

## A. PROFILE

## 1. DESCRIPTION

OVERVIEW	<p>The PV-Invest Group, which is headquartered in Klagenfurt, was founded in 2009 and is operating in the field of renewable energy in Europe as well as in the MENA Region (Middle East &amp; North Africa). At the moment, the portfolio includes 41 completed energy producing facilities and three facilities that are under construction. The overall capacity amounts to more than 35 MWp (Mega Watt peak).</p> <p>In its business activities, the company mainly plays the role of developer and investor. Major activities are carried out by suppliers and service providers. In 2018, the company had 18 employees in 6 countries.</p>
SEGMENTS	<p>The company's activities are focused on planning, acquisition and operation of photovoltaic plants and increasingly hydroelectric power plants.</p> <p>(1) Electricity generation: About two thirds of the revenues in 2018 fall to electricity generation. The energy sources are broken down as follows: 65% photovoltaics in green fields, 28% photovoltaics on roof areas and 7% hydroelectric power.</p> <p>At the moment, the portfolio includes 42 photovoltaic facilities, (one of them under construction), with an overall generation capacity of about 35 MWp. In the project pipeline, there are additional 27 facilities with a capacity of almost 50 MWp. The company is entering the segment of hydroelectric power with two small hydroelectric power plants that are being built and have an overall generation capacity of about 2 MW. Furthermore, three additional hydroelectric plants with a power of 1.6 MW are being planned.</p> <p>(2) EPC business (Engineering / Procurement / Construction): In the last few years, the importance of project handling business has largely increased, in particular due to the merger with KPV Solar. The revenue share has increased from 15% (2016) to 33% (2018).</p>
STRUCTURE	<p>PV-Invest is a Private Limited Company under Austrian law that is headquartered in Klagenfurt. The two General Managers Günter Grabner and Gerhard Rabensteiner are the owners and shareholders on a parity basis.</p> <p>As many facilities are operating in separate special-purpose entities, 38 subsidiaries are operating under the umbrella of the PV-Invest Group, 33 being fully consolidated.</p> <p>2016 saw the merger with KPV Solar, a leading Austrian developer of photovoltaic and solar thermal power plants.</p>
MARKETS	<p>The company is an operator of photovoltaic and small hydroelectric power plants. Depending on the local regulations, it draws its income from power traders or handling points for electricity supplied by renewable energy sources (e.g. Slovenia: Bolzano, Italy: GSE). In the EPC business, the clientele ranges from local and national small and medium-sized enterprises to multinational consortia.</p> <p>Austria (exclusively EPC business), Slovenia, Italy, North Macedonia and Bulgaria make up a revenue share of more than 95% and thus are the most important markets. Moreover, the company is operating in Germany, France, the Czech Republic, Bosnia-Herzegovina, Hungary, Saudi Arabia, Qatar and Iran. In future business activities might be expanded to additional markets (e.g. Kazakhstan).</p>

## 2. BUSINESS INDICATORS

	TURNOVER [MILL. EUR]	PROFIT [T EUR]	BALANCE SHEET TOTAL [MILL. EUR]	EQUITY CAPITAL [MILL. EUR]	EQUITY CAPITAL INCL. SECONDARY LIABILITIES [MILL. EUR]
2018	13.9	-156	72.2	3.2	5.6
2017	10.9	7	68.7	3.8	5.8
2016	7.9	317	50.9	4.0	6.0

PV-INVEST GMBH (LTD.)

**B. EXCLUSION CRITERIA****EXCLUSION NO****1. DEFINITIONS**

Significant relative importance (in % of the sales volume) or absolute importance of one or more of the following activities or practices

ARMAMENT	- ABC weapons (weapons of mass destruction), weapon systems or key components; - conventional military weapons, weapon systems or key components; - specifically military material or specifically military services	<b>NO</b>
NUCLEAR ENERGY	- electricity generated in nuclear power plants; - nuclear power plants and specific key components and services; - nuclear fuels	<b>NO</b>
ADDICTIVE DRUGS	- tobacco, tobacco goods and specific substances contained; - spirits with an alcohol content of more than 20 volume per cent	<b>NO</b>
GENE TECHNOLOGY	- human gene technology problematic in ethical or social terms; - gene technology problematic in ethical or social terms in agriculture and livestock farming	<b>NO</b>
GAMING	- operating gambling and betting; - facilities and services specific to gambling and betting	<b>NO</b>
OTHER	- other activities or practices that have strongly adverse ethical, social or ecological impacts or risks	<b>NO</b>

**2. INVOLVEMENT**

The company is not significantly involved in any of the exclusion criteria. However, minor indirect involvement is imaginable and expectable. This involvement primarily results from the social and ecological risks at the extraction and further processing of individual raw materials in the complex supply chain of solar industry.

Up to now, these risks have been controlled to a limited extend actively by the PV-Invest Group in form of a consistent supply chain policy.

## C. STAKEHOLDER & PRODUCT CRITERIA

### C.1. EMPLOYEES

RATING **ba**  
DATA RATE 37%

#### 1. DESCRIPTION

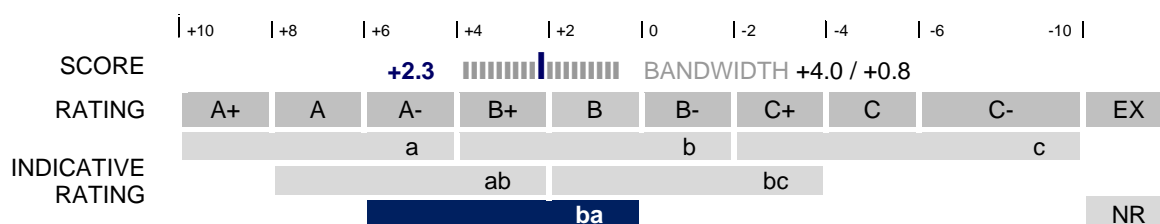
In 2018, the company had 18 employees (in FTE - full time equivalent; 2017: 16; 2016: 5). One third is employed in Austria, one third in North Macedonia. The other employees work in Bulgaria, Hungary, Slovenia and Iran. The high share of employees in Macedonia can be traced back to positions in park monitoring.

In its business activities, the company mainly plays the role of developer and investor. Major activities are externally carried out by suppliers and service providers. This is reflected in the financial report, where personnel expenditure only makes up a small fraction of the costs.

#### 2. FEATURES

PRINCIPLES & STRATEGIES	The employee strategy is based on high autonomy. Concrete guidelines or goals are not formulated.
MANAGEMENT SYSTEMS & ORGANISATION	Due to the company size and decentralized structure in many countries, there is no company-wide HR (Human Resources) Management.
PROGRAMMES, ACTIVITIES & RESULTS	<p>PV-Invest has employees in several countries, with very different legal situations and standards. An explicit commitment to exceed these standards is partly identifiable. Due to the sector, however, risks relating to workplace quality are only expectable to a limited extent or can primarily be found in the supply chain (see C.4.).</p> <p>The company pays wages and salaries above the collective agreement and offers bonus payments. In Austria, there is a low income gap of 1:2.4. Even remuneration of management corresponds to the average salaries. Social benefits going beyond the legal obligations exist to a smaller extent. At subsidiaries in the respective countries, managers are participating in profit-sharing schemes.</p> <p>Since 2016, the company has grown strongly. Thus, the company has created jobs directly and indirectly. This has partly also been due to deliberations in terms of social policy and has not been caused by economic necessities. At the moment, disadvantaged people are not employed.</p> <p>About 80% of the employees are male. The activities in Hungary and Iran are managed by women.</p> <p>Training and education are supported by the company. Several employees take part in training programmes that partly last several years. At regular intervals, meetings at a group level, which last several days, are held. According to the company's own information, fluctuation within the company is very low. This suggests that overall satisfaction with work is high.</p> <p>In general, the amount of concrete information on significant aspects of sustainable workplace design is not high. Among other things, this information includes health and well-being, diversity and discrimination, work-life balance and co-determination.</p>

#### 3. RATING



PV-INVEST GMBH (LTD.)

## C.2. SOCIETY

**RATING** **ab**  
**DATA RATE** 63%

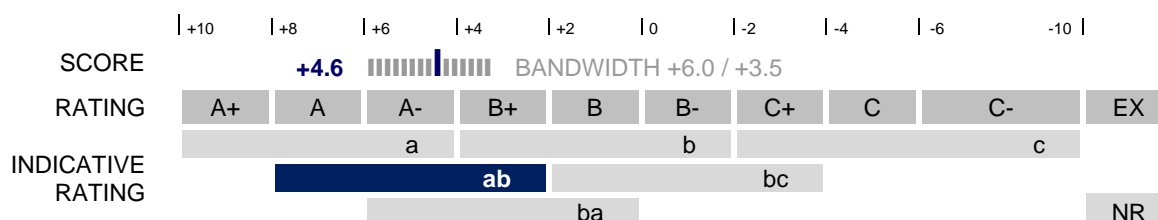
### 1. DESCRIPTION

The societal stakeholders are represented by the local communities and regions, public authorities, NGOs (non-governmental organizations), media, etc., in the key markets Slovenia, Italy, Macedonia, Austria and Bulgaria as well as the other countries where PV-INVEST is operating. These countries also include some ethically risky states, such as Iran, Saudi Arabia and Qatar. However, the revenue share of these countries has been extremely low up to now.

### 2. FEATURES

PRINCIPLES & STRATEGIES	A positive strategy is implicitly enabled by the business activities in the field of renewable energy production, which is important in societal terms, and, in addition, by a distinct focus on integrating regional companies into the value chain.
MANAGEMENT SYSTEMS & ORGANISATION	As the company is small-scaled, there is neither an explicit sustainability management nor compliance management.
PRODUCTS & SERVICES	At the moment, energy supply is based on fossil energy carriers. This is one of the most important factors leading to climate change. A transition to an energy supply based on renewable energies is a basic requirement for making society more sustainable. The services provided by PV-Invest in the field of solar and hydroelectric power is a direct and effective contribution to this.  Societal aspects of energy supply are related to decentralization, security of supply and independence from fossil energy carriers. Still another key aspect of social sustainability is affordability of electricity. Pricing and consequently affordability of green electricity generated is outside the sphere of influence of the PV-Invest Group.
PROGRAMMES, ACTIVITIES & RESULTS	The company's facilities are state of the art and imply impacts on neighbours that are relatively low. The website of PV-Invest includes hardly any specific information for neighbours. For the time being, local stakeholders concerned and/or their representatives (NGOs) do not seem to be involved systematically.  In some project sites, such as Saudi Arabia, there are risks relating to bribery and corruption as well as human rights. Concrete measures for avoiding and/or reducing these risks can be found partially (4-eye principle for all cash flows).  Publicly available information on social and ecological sustainability is limited to aspects of product ecology. Yet this is congruent with the company size. On the website, this information is also put into relation with the Sustainable Development Goals. However, major aspects and risks (e.g. supply chain) are not addressed explicitly.  The company group's turnover tax rate in relation to the pre-tax profit gives no reason to suppose a tax evasion strategy.  In single cases, local projects are supported by donations.

### 3. RATING



## PV-INVEST GMBH (LTD.)

**C.3. CUSTOMERS**

**RATING** **ab**  
**DATA RATE** **49%**

**1. DESCRIPTION**

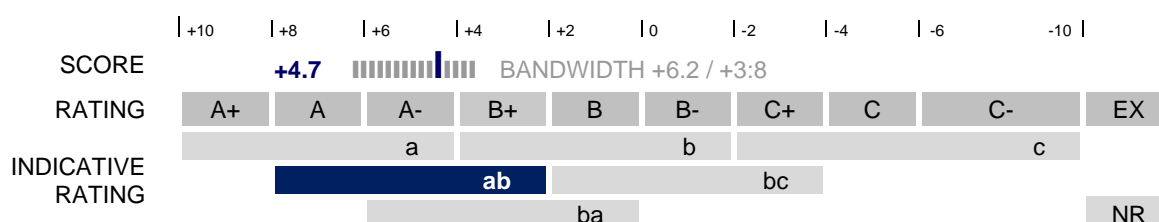
About two thirds of the revenues in 2018 went to sales of electricity, one third to project handling business (EPC - Engineering / Procurement / Construction), which had increased a lot in the last few years. Austria (35%), Slovenia, Italy, North Macedonia and Bulgaria make up a revenue share of more than 95% and thus are the most important markets. Moreover, the company is operating in Germany, France, the Czech Republic, Bosnia-Herzegovina, Hungary, Saudi Arabia, Qatar and Iran. The facilities that are being planned can primarily be found in Italy as well as in various countries in South-East Europe.

Depending on the local regulations, the company draws its income from power traders or handling points for electricity supplied by renewable energy sources (e.g. Slovenia: Bolzano, Italien: GSE). In the field of EPC business, the clientele ranges from local and national small and medium-sized enterprises to multinational consortia.

The company is not characterized by a position of power towards its customers, and risks are very low.

**2. FEATURES**

PRINCIPLES & STRATEGIES	When providing services, the company focuses on facility quality, safety and security.
MANAGEMENT SYSTEMS & ORGANISATION	<p>The company itself has no explicit quality management. However, all facilities are subjected to a comprehensive technical due diligence check, which covers technical, legal and economic aspects.</p> <p>Ethical risks relating to customers are low because of the products and services. However, companies or states critical from a sustainability perspective might be clients. Relevant formulated principles are not in use yet. Still the company has already refused projects for socio-economic reasons repeatedly.</p>
PRODUCTS & SERVICES	<p>Due to its positioning, the company contributes to sustainable power supply of its customers. The company's facilities are state of the art and equipped with on-line monitoring. Moreover, the facilities are insured by comprehensive all-risk policies.</p> <p>Apart from the generally positive product impression, explicitly social design can only be found in rudiments (e.g. sharing know-how and offering products to low-income regions at a lower price).</p>
PROGRAMMES, ACTIVITIES & RESULTS	<p>As the company has a low market power, the regulated market and due to the fundamental characteristics of the sector, discrimination of customers, e.g. in connection with price policy, is not probable.</p> <p>In project business, KPV Solar offers a two-year service guarantee, 12 years of product warranty and 25 years of performance guarantee to the customers. Services are provided by O&amp;M Partners (Operations and Maintenance).</p> <p>The website of the company group is available in German, English and Hungarian. KPV Solar and the Slovenian subsidiary have their own websites. Information on data protection is provided comprehensively. Only relatively little information is available to customers.</p> <p>Sustainability aspects going beyond the generally positive product impact play hardly any role in customer communication (e.g. life cycle assessment). However, it is very seldom that customers want to know more about these aspects.</p>

**3. RATING**

PV-INVEST GMBH (LTD.)

# C.4. MARKET PARTNERS

**RATING** **ba**  
**DATA RATE** **54%**

## 1. DESCRIPTION

As a project developer and operator, the company purchases all facility components as well as major services. The by far largest expense positions are material expenditure (2018: 4.855 T€) and depreciations (2.896 T€). This hints at the big importance of the supply chain. In addition, the other expenses (2.336 T€) are important in financial terms. These expenses include all current costs that are not stated in the other positions, namely administrative, consulting, publicity, travelling and similar costs. The purchased costs (716 T€) particularly include building and operating services.

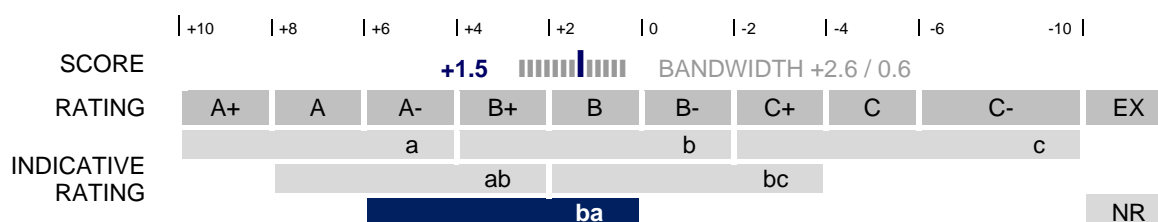
Suppliers for the main components are KIOTO Photovoltaics GmbH (LTd.) (PV Modules) as well as Fronius International GmbH (Ltd.) (converters). In Hungary, PV Modules made by Huawei are purchased. Cables (for the most part Lapp) and substructures (for the most part Aluvero, Salzburg) are purchased from few selected suppliers as needed and available. The power plants will, as a rule, be erected by local subcontractors. ENcome Energy Performance is a frequent management partner.

In the past, components and services were also purchased from other companies, such as Sun Earth, Heckert Solar, Canadian Solar, AE Solar, SMC, Hilti, Samil, Schletter, ABB Power One or Green Energy-R.

## 2. FEATURES

PRINCIPLES & STRATEGIES	The company has a clear strategy for strengthening the regional value chain and cooperating with local market partners on a long-term basis. No additional concrete strategies are known.
MANAGEMENT SYSTEMS & ORGANISATION	Regionalism is a major aspect in purchasing. Framework conditions such as legal standards and standards help to significantly reduce social risks (e.g. those relating to working conditions). At selection of suppliers, explicit social criteria, which go beyond this, are not applied.
PRODUCTS & SERVICES	<p>The two main suppliers (KIOTO, Fronius) have certified management systems in important areas (ISO 14001 und 9001, OHSAS 18001) and excel by positive approaches in individual areas (e.g. Fronius: 62% of energy input come from renewable sources). However, it could hardly be stated that the suppliers dealt with sustainability to an above-average extent. Besides, the list of suppliers also includes companies with activities that are very controversial in ethical terms (Huawei).</p> <p>Major sustainability risks are mainly connected with upstream production steps that occur particularly early (winning and processing of raw materials) as well as services whose employment relationships may be precarious (e.g. construction work, management partners). An approach going beyond the legal requirements is hardly identifiable. However, the fact the PV Modules are largely purchased from local providers has very positive impacts.</p>
PROGRAMMES, ACTIVITIES & RESULTS	<p>Due to the company size, the PV-Invest Group cannot be assumed to have a distinct market power on its most important purchasing markets. Cooperation with suppliers and partners is often based on strategic partnerships.</p> <p>Top management took part in a research project about steel production based on renewable energies. Furthermore, the company is a member of respACT, Austria's leading platform for Corporate Social Responsibility (CSR) and Sustainable Development. Up to now, the company has hardly taken part in general or sector specific sustainability initiatives.</p>

## 3. RATING





## PV-INVEST GMBH (LTD.)

## C.5. INVESTORS

RATING **bc**  
DATA RATE 50%

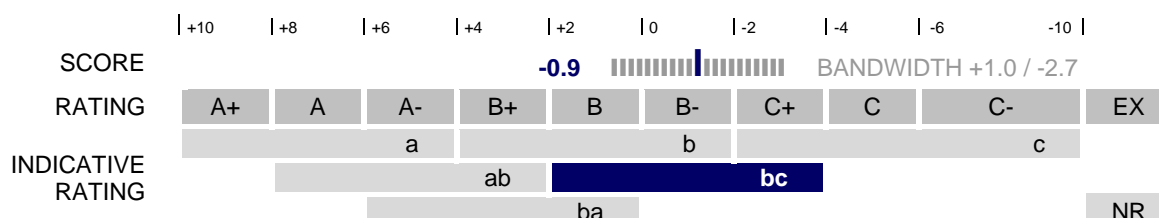
## 1. DESCRIPTION

The two General Managers Günter Grabner and Gerhard Rabensteiner are the owners and shareholders on a parity basis. Funding will primarily be done by means of bank credits, which make up Euro 28.1 million and 39% of the total equity and liabilities (Euro 72.2 million). Liabilities to the amount of Euro 17.7 million apply to citizen participation funding (25%). The overall volume of outstanding loans rose from Euro 5.8 million (2016) to Euro 14.6 million. In this respect, the interest rate is between 4.15% and 10%. The assets primarily include tangible assets to the amount of Euro 51.4 million (71%).

## 2. FEATURES

PRINCIPLES & STRATEGIES	In the company presentations, particular attention is drawn to investors, safety and transparency being to the fore. The strategic alignment relating to sustainable ways of funding can be highlighted positively.
MANAGEMENT SYSTEMS & ORGANISATION	Risk management primarily refers to technical, legal and economic aspects of the facilities. In case of financial risks, variable interests will be secured by means of swaps.
PROGRAMMES, ACTIVITIES & RESULTS	<p>In late 2018, the equity ratio amounted to 4.4%. In the last few years, it has been dropping continuously (2017: 5.6%; 2016: 7.9%). Considering secondary loans, the ratio was slightly higher in 2018, amounting to 7.8 (2017: 8.4%; 2016: 11.8%). In 2016, a credit rating was made by Creditreform ("BB-"). This rating critically commented the debt-to-equity ratio. As of December 31, 2018, sufficient liquidity could be stated. However, the equity ratio is highly below-the-average.</p> <p>Progressive growth policy is reflected in the profit / net loss for the year of the last few years: 2018: -156 T€; 2017: 7 T€; 2016: 317 T€ (while considering the shares of other shareholders: 2018: -379 T€; 2017: -232 T€; 2016: 31 T€). The result accumulated over the years amounts to Euro 1.6 million. However, the last year with a significant profit occurred before the merger with KPV Solar. Budgeting assumes an economic turnaround in the upcoming years. Therefore, no new investment is assumed. The regulated business environment for green electricity enables a comparably secure revenue forecast for the majority of sales, a certain political risk being considered besides weather conditions.</p> <p>The company's website includes a separate area for investor relations, where usual information is given. Information policy towards the investors is oriented towards the legal requirements (brochure). Financial reports are published periodically. In future, corresponding areas are to provide information by giving ad-hoc messages and director's dealings.</p> <p>As far as corporate governance measures are concerned, little information is available. Potential conflicting interests with the sister company "Unser Kraftwerk" ("Our power plant") might arise at a changed business strategy on the Austrian market.</p> <p>In 2019, the company was convicted to a smaller fine by FMA ("Finanzmarktaufsicht" - Financial Market Supervision) because of a missing hint in the brochure and misleading advertising.</p> <p>The loans and bonds emitted by the company clearly address investors interested in sustainability. Besides conventional finance funding and capital market funding, comprehensive citizen participation projects are made in Slovenia. An extension of green bonds and citizen participation has already been envisaged in several markets (Hungary, Iran). However, it has not been materialized yet.</p>

## 3. RATING



PV-INVEST GMBH (LTD.)

# C.6. ENVIRONMENT

**RATING** **ab**  
**DATA RATE** **61%**

## 1. DESCRIPTION

The natural environment in form of eco-systems, animals and plants, soils, water, air, landscape, etc., is represented by NGOs (non-governmental organizations), public authorities and the public in general. For a larger part, the natural environment will be affected by the production of major components in the supply chain (see also C.4.).

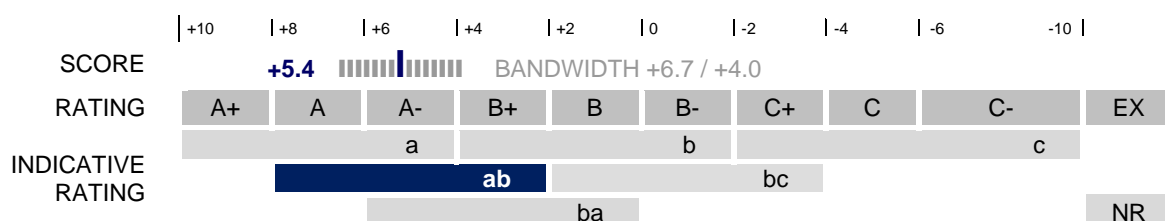
(1) At photovoltaics, monocrystalline and polycrystalline modules will be used. Impacts are mainly due to upstream production. In this respect, aspects relevant ecologically are (a) winning of silicon, (b) transformation to ingots and wafers, (c) modularization (circuitry and lamination) and (d) other components (converters, aluminium frames).

(2) Besides climate efficiency, the most important ecological factors of a hydroelectric power plant (run-of-river power plant) are damming up and entrainment of bed load and their impacts on flora and fauna. In this respect, small power plants basically do not differ from larger facilities. Relevant aspects are (a) construction and transport, (b) materials used and other input factors (building and auxiliary materials, furnishings, energy carriers, etc.) as well as (c) the ecological conditions in the supply chain.

## 2. FEATURES

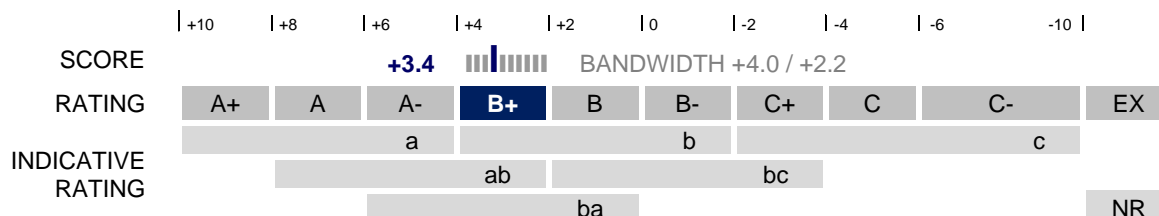
PRINCIPLES & STRATEGIES	The PV-Invest Group has no formulated environmental policy. However, the company's strategic alignment is characterized by a strong ecological component.
MANAGEMENT SYSTEMS & ORGANISATION	Environmental criteria in the supply chain as well as specific facility related aspects have a high relevance. At the moment, they hardly seem to be acquired and controlled systematically apart from the selection of regional cooperation partners and single aspects of facility selection.
PRODUCTS & SERVICES	<p>Despite of positive climate impact during operation, also renewable energies lead to greenhouse gases: for photovoltaics approx. 30-50g CO<sub>2</sub>e/kWh and for hydroelectric power approx. 10-40 CO<sub>2</sub>e/kWh. Thus the emissions are much lower than the average impacts of present power supply. This basically makes it possible to derive a very positive impact in terms of product ecology. CO<sub>2</sub> savings are estimated by the company. For the existing facilities, there is no impact assessment over the life cycle.</p> <p>(1) As for green field areas, usually fallow land or landfills, pile-driving is preferred to concreting. As for roof construction asbestos roofs have partly been replaced. Panels that do not work properly will be returned to the manufacturers.</p> <p>(2) At projects for hydroelectric power, the company acts as an investor and buys small power plant projects that have already been developed while keeping interventions comparably small. Single projects have been refused for ecological reasons (e.g. approved project in a nature reserve).</p>
PROGRAMMES, ACTIVITIES & RESULTS	<p>Major impacts can, above all, be found in the supply chain. In this respect, PV Invest closely cooperates with few companies. With these companies, an above-average ecological performance can only be stated to a very limited extent (see C.4.). Besides, there is hardly any information on major ecological aspects of production.</p> <p>The direct environmental impacts are, above all, connected with energy input (electricity, heat, mobility) and operation of office buildings (IT (information technology), furnishings, paper, water, etc.). Some positive measures are known (electric car, PV facility on the main location, environmentally friendly paper). However, there is no tangible data, in this respect. A very high mobility impact has to be assumed.</p>

## 3. RATING

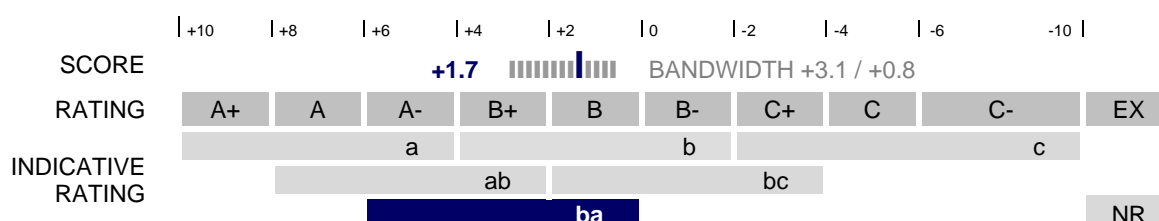


## D. RATING ACCORDING TO MANAGEMENT LEVELS

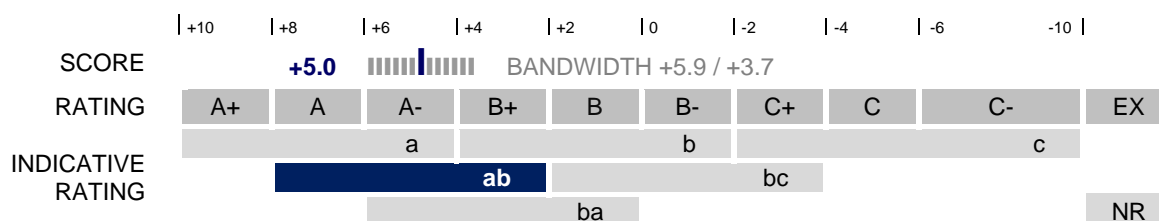
### 1. PRINCIPLES & STRATEGIES



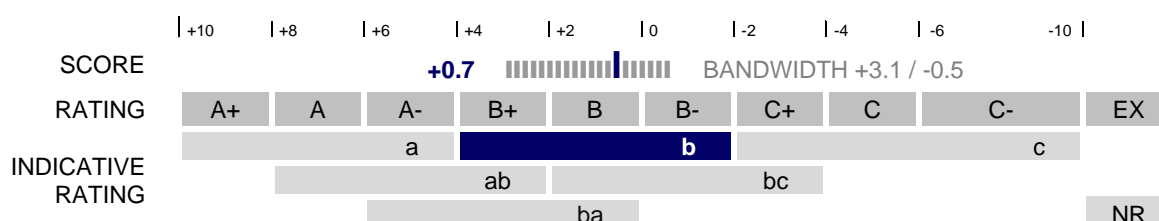
### 2. MANAGEMENT SYSTEMS & ORGANISATION



### 3. PRODUCTS & SERVICES



### 4. PROGRAMMES, ACTIVITIES & RESULTS



### 5. FEATURES

As the company is small-scaled, it does not have any formulated principles or institutionalized processes in form of management systems.

The company's products and services significantly contribute to an ecological transformation of the societal energy system.

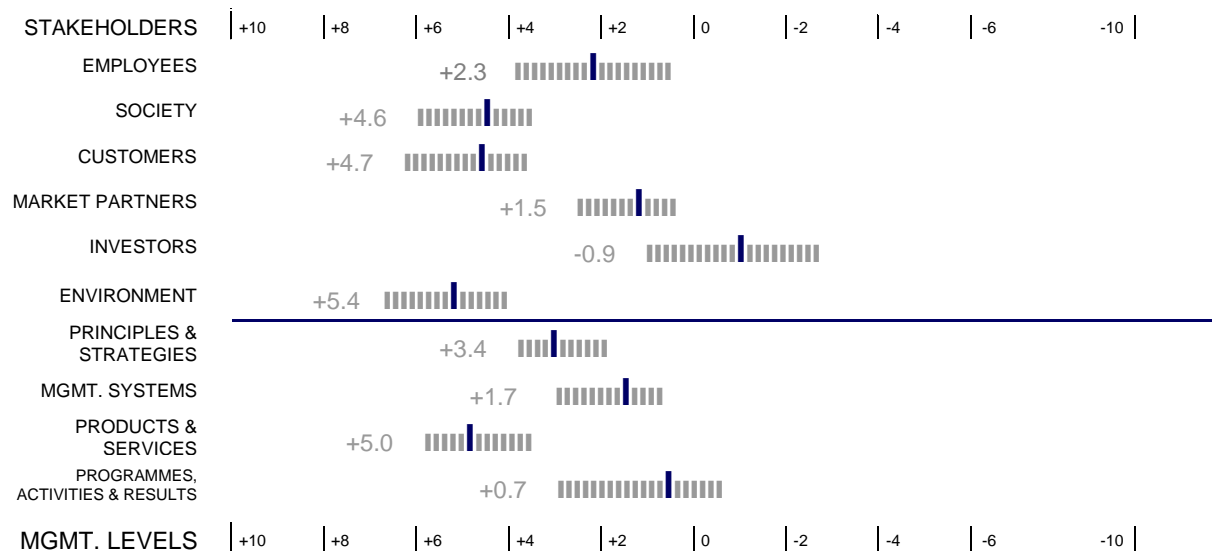
Explicit ecological or social measures, which go beyond the product level, are only visible to a limited extent. This is reflected in the rating of the level of programmes, activities and results.

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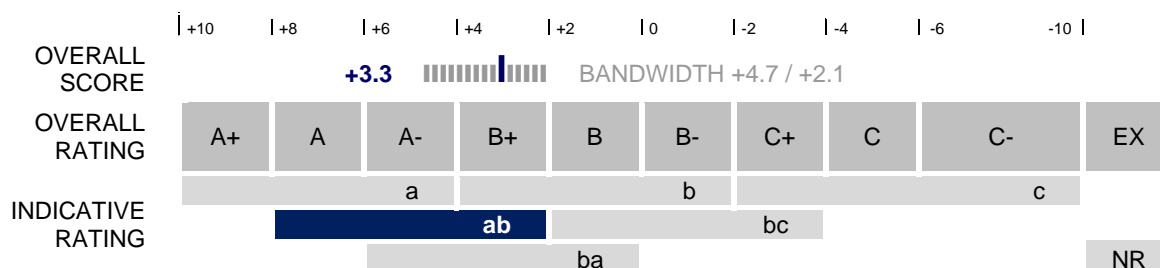
# E. OVERALL RATING

**RATING** **ab**  
**DATA RATE** 56%

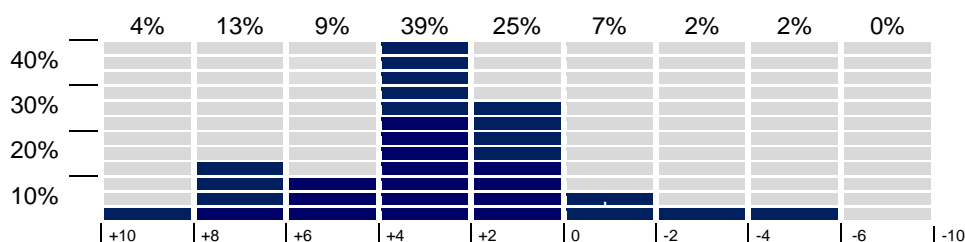
## 1. AGGREGATION ACCORDING TO STAKEHOLDERS & MANAGEMENT LEVELS



## 2. OVERALL RATING



## 3. SCORE DISTRIBUTION AT A CRITERION LEVEL



## 4. RATING HISTORY & OUTLOOK

YEAR	Outlook	9/2019
RATING	Stable	ab / +3.3

**OUTLOOK** The next update of the analysis is not yet defined. The rating outlook basically is stable. Based on the current score of +3.3, PV-Invest reaches the status “qualified” in the rfu Sustainability Rating. If the recommendations (see G.) are implemented, a noticeable rating improvement and positioning in the leading group can be expected.

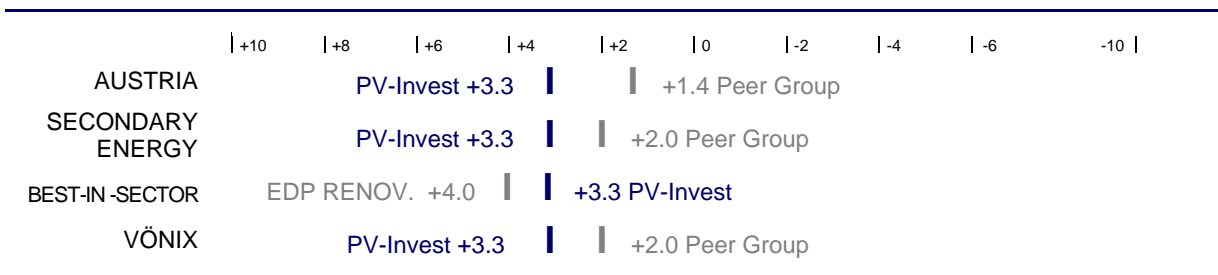
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## F. BENCHMARKING

### 1. PEER GROUPS

	COUNTRY/ REGION	INDUSTRY GROUP / SECTOR	SUSTAINABILITY BENCHMARK	NUMBER & MEMBERS
ACC. TO THE COUNTRY	AT			56 share and bond issuers
ACC. TO THE SECTOR		Secondary Energy		23 share and bond issuers, international
BEST-IN- SECTOR		Secondary Energy		EDP RENOVAVEIS
ACC. TO SUSTAINABILITY	AT		VÖNIX	19 share issuers with the status "Qualified"

### 2. COMPARISON



**COMMENT** In terms of sustainability, PV-Invest has a distinctly above-average position as compared to the listed Austrian companies as well as to the members of the VÖNIX Index.

As compared to the international sector (secondary energy), PV-Invest also is clearly above the mean sustainability level but does not reach the leading group - which is, in the present peer group, represented by the Portuguese energy supplier EDP RENOVAVEIS.

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## G. RECOMMENDATIONS

### 1. RECOMMENDATIONS

EXCLUSION CRITERIA	The formulation of criteria under what circumstances no business relationships will be entered into would be a positive signal as far as risk awareness is concerned.
PRINCIPLES & STRATEGIES	A mission statement that is tailored to the company's specific features and includes major key areas (e.g. sustainability standards for the supply chain and facilities, workplace policy) should be developed.
MANAGEMENT SYSTEMS & ORGANISATION	The fundamentals of a simple management system (processes, indicators, target-performance comparison, improvement measures) based on existing processes might be meaningful to develop.
PRODUCTS & SERVICES	Despite their high significance for energy transition, even renewable energy carriers imply adverse impacts. Social and ecological minimum requirements should be defined in order guarantee positive social and environmental impacts.
EMPLOYEES	The company should exchange ideas with the employees in order to lay down basic principles of workplace policy and develop measures leading to satisfaction that is high durably. In this respect, such important topics of sustainable workplace design as health, well-being, equal rights, work-life balance, co-determination or training and further training should be addressed and tackled.
SOCIETY	<p>In order to complement the picture of environmental and social performance of the company group, it might be helpful to provide more information on the supply chain and employees. Communication with parties concerned and/or affected by projects should be systematized as well (e.g. neighbours, NGOs).</p> <p>Social commitment might be expanded while specifically focusing on the company's key areas, above all in countries with lower income levels (e.g. sharing know-how, offering services at reduced prices).</p> <p>As projects are implemented in countries with sensitive legal situations, dealing with risky topics such as bribery and corruption as well as human rights, is becoming more and more important and should be addressed and tackled actively.</p>
CUSTOMERS	Contents raising awareness of sustainability might be imparted through web presence, advertising and personal contact.
MARKET PARTNERS	<p>In the supply chain social and ecological risks and impacts have to be expected. Besides a definition of concrete criteria, above all those relating to critical processes and regions, major impacts should be evaluated and improved together with cooperation partners (e.g. use of renewable energies and recycled raw materials in the production process, above-average working conditions).</p> <p>Well-aimed participation in sustainability related industry initiatives would be desirable. This does not only refer to orientation towards demanding and sophisticated labels for green electricity but also to research and cooperation in terms of important challenges of energy transition.</p>
INVESTORS	Even though the energy sector offers a stable business environment, the equity ratio should be two-digit again and corresponding to the level customary in the industry. Information on future business development should be made available adequately.
ENVIRONMENT	<p>The company's facilities should be subjected to an impact assessment. Based on this assessment, measures for reducing major impacts should be taken in cooperation with the most important suppliers while providing important information (e.g. greenhouse gas intensity) to the customers.</p> <p>Single indicators (e.g. carbon footprint, mobility indicators, energy consumption) of the company's impacts as well as effective measures in significant areas (above all mobility) would credibly underpin ecological alignment.</p>

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**H. SOURCES****1. DATA RATE**

Among the criteria relevant to the PV-INVEST Company Group, whose number amounts to 60, 58 criteria could be assessed - partly based on an incomplete level of information. Thus, a total data rate of 56% has been reached.

**2. PUBLIC SOURCES OF THE COMPANY**

BUSINESS REPORTS - Business Report 2018 and earlier business reports of PV-Invest GmbH (Ltd.)  
- bond brochure

SUSTAINABILITY REPORTS -

WEBSITES - company website (www.pv-invest.com)  
- websites of the subsidiaries

OTHER -

**3. SOURCES OF THE COMPANY SPECIFICALLY MADE AVAILABLE**

QUESTIONNAIRE - answers to the Questionnaire 2019

DIRECT CONTACT - contacts with company representatives on the phone

OTHER - budgeting;  
- overview of the project pipeline

**4. EXTERNAL SOURCES**

PUBLIC ONES - life cycle analyses of different energy generation methods;  
- company rating made by Creditreform;  
- media research;  
- online keyword research

PRIVATE ONES

**5. INTERNAL SOURCES**

RESEARCH - rfu Data Pool and Report and earlier sources;  
- regional social and environmental standards from rfu Database of Countries

BENCHMARKS - rfu Research Universe Austria  
- rfu Research Universe CEE (Central and Eastern Europe)  
- rfu Research Universe International

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## IMPRINT



sustainability · research · consulting

**Mag. Reinhard Friesenbichler**  
**Unternehmensberatung**

A-1060 Vienna, Loquaipplatz 13/10, [www.rfu.at](http://www.rfu.at)  
[office@rfu.at](mailto:office@rfu.at), Tel. +43(0)1 7969999 -0, Fax -9

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