

## Photon Energy N.V.

Date: 09/25/2017

### Investment in solar power plants with stable cash flows

- ⇒ Photon Energy plans the issuance of a **bond (2017/22) with a volume of up to EUR30.0m**. The proceeds will be used to **grow the proprietary IPP portfolio to an estimated 104.2 (currently: 25.6) MWp** and to refinance the outstanding bond 2013/18.
- ⇒ The issuer has a **solid track record on the capital markets** with its **Frankfurt-listed bond 2013/18** (trading around 100%) and its **stock listing** in Warsaw and Prague (market cap.: EUR19.0m).
- ⇒ The **solar plant projects in Hungary (+50.0 MWp) are most attractive** to us. Due to the high feed-in tariffs we expect a **FFO of EUR4.9m** (segment Production of Electricity incl. bond interest: 12.9) in 2022E. We think the government will attach great importance to a reliable regulatory framework. Hungary still has a low share of renewable energies (2015: 10.6% of electricity production vs. consumption target of 14.65% in 2020E). The **Australian projects offer huge growth potential** at lower FFOs. There are also possibilities to grow the IPP portfolio after 2019E.
- ⇒ For bond investors, the **Czech and Slovak solar plants are major assets** and FFO generators (2022E: EUR8.3m). They should be **nearly debt-free at the end of 2022E**. So, Photon Energy could load **new debt on the assets to refinance the bond 2017/22**.
- ⇒ Compared to the peer group (median yield: 3.8%) the **bond conditions are attractive** (coupon: 7.75%). However, given (only) **temporarily higher debt ratios** a higher coupon seems justified.

#### Company data

Sector	Renewable Energies
Segment	Quotation Board of the Frankfurt Stock Exchange
ISIN	DE000A19MFH4
WKN	A19MFH

#### Bond details

Type of security	Bearer note
Issuing volume	Up to EUR30.0m
Denomination	EUR1,000
Subscription period*	10/09/2017-10/24/2017
Initial offering*	10/27/2017
Duration	5 years
Maturity	10/26/2022
Issuing price	100% of nominal value
Redemption price	100% of nominal value
Coupon	7.75%
Interest payment	Quarterly
Investors of bond 2013/18	Exchange offer
Exchange period*	09/25/2017-10/20/2017

\* planned

	2017E	2018E	2019E	2020E	2021E	2022E
Capacity (MWp)	26.1	79.7	104.2	104.2	104.2	104.2
Average cap. (MWp)	25.6	50.5	89.9	104.2	104.2	104.2
Electr. prod. (MWh)	27,057	61,616	116,382	135,267	135,267	135,267
Revenue	14.8	17.4	22.3	24.7	25.2	25.7
Adjusted EBITDA	7.6	9.4	13.2	15.2	15.5	15.8
Adj. EBITDA margin	51.5%	54.2%	59.0%	61.3%	61.4%	61.3%
Net income	-0.2	-1.4	-0.3	1.1	1.6	2.4
Compreh. income	0.0	11.7	7.3	1.1	1.6	2.4
Dividend	0.0	0.0	0.0	0.0	0.0	0.0
Equity ratio*	25.1%	25.7%	27.4%	29.5%	32.2%	39.3%
Net debt	44.1	84.6	98.7	89.1	78.9	68.1
Net debt / EBITDA**	6.0	6.8	7.0	6.2	5.4	4.7
Net gearing	1.9	2.4	2.3	2.1	1.8	1.4
EBITDA inter. cov.**	2.4	2.1	2.7	3.1	3.4	3.9
EBIT interest cov.**	0.7	0.6	0.9	1.2	1.4	1.7
FFO	4.3	4.8	7.8	9.5	10.1	10.8
FFO / revenue	29.0%	27.9%	34.8%	38.6%	39.9%	41.9%
FFO segment PE***	6.6	7.0	10.0	11.7	12.2	12.9
FFO segment O&M	0.2	0.3	0.4	0.4	0.5	0.6
Free cash flow (FCF)	2.8	-40.7	-14.4	9.4	10.1	10.9

Figures in EURm Source: Independent Research; Photon Energy N.V. \* as defined in the bond 2017/22 covenants \*\* adjusted (i.e. adjusted EBITDA or adjusted EBIT) \*\*\* PE = Production of Electricity

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## SWOT analysis

### Strengths and Opportunities

- Several years of track record on the capital markets with the bond 2013/18 (listed at Frankfurt Stock Exchange) and the Photon Energy stock (listed in Warsaw and Prague)
- Stable FFO from proprietary Czech and Slovak solar plants (group FFO on a status quo basis: EUR4.5m (2018E) to EUR5.3m (2022E)) covering all interest payments for years to come
- Strong capacity to leverage Czech and Slovak solar plants again at the end of 2022E to repay bond 2017/22 since solar plants should be nearly debt-free - i.e. attractive safety net
- Successful reorganisation in the past years with net profit and record figures in H1 2017, a reduction of net debt (2017E vs. 2013: EUR-7.5m) and sale of non-core assets (e.g. in Italy)
- Segment O&M has achieved critical size (> 200 MWp) and profitability
- IBO proceeds to be invested in proprietary solar plants - stable and predictable cash flows
- Most promising, high FFO generating solar projects in Hungary due to high feed-in tariffs
- Expansion of proprietary IPP portfolio and of O&M business leads to economies of scale
- Growth opportunities in Australia with proprietary solar plants (Leeton project included in forecasts) and upside potential with co-development projects (not included in forecasts)
- Additional growth potential for proprietary IPP portfolio in the years 2020 and beyond

### Weaknesses and Threats

- As a small player so far Photon Energy could not sufficiently realise economies of scale
- Despite improvements, cost structure is still characterised by losses in the solar plant development and construction business as well as by overproportional expenses on holding level
- O&M remains a competitive business with margin pressure
- Strong capacity growth leads to temporarily high debt ratios above the peer group level
- Hungary with window of opportunity of just two to three years: attractive compensation for solar plants under the old KÁT scheme (solar plants have to be commissioned until the end of 2019E) but less favourable conditions under the new METÁR scheme
- Geographic distance between Europe and Australia as a challenge - from our point of view the Australian business is a separate entity
- Significant promotion of renewable energies in Australia but market characterised by lower PPA (power purchase agreement) tariffs and lower FFOs of solar plants compared to Hungary
- Partially complex structure with Dutch holding, leasing agreements for Czech solar plants and stock listing in Warsaw and Prague - ring fencing by using SPVs makes absolutely sense

## The offer

*Proceeds for refinancing  
and expansion of portfolio*

### Placement volume of up to EUR30.0m

The planned bond issue is Photon Energy's second bond issue in Germany. It has a placement volume of up to EUR30.0m and a coupon of 7.75% (maturity: 5 years; interest payment: quarterly; face value: EUR1,000). There is currently no rating assigned to the issuer. Photon Energy intends to refinance its outstanding 2013/18 bond. The remaining proceeds of the issue will be invested with a focus on current promising markets Australia and Hungary.

#### Photon Energy N.V. Key data of the bond

Issuer	Photon Energy N.V.
Type of security	Bearer note
ISIN / WKN	DE000A19MFH4 / A19MFH
Listing	Quotation Board of the Frankfurt Stock Exchange
Type of placement	Public placement in Luxembourg, Germany and Austria Private placement in other EU countries
Issuing volume	Up to EUR30.0m
Denomination	EUR1,000
Duration	5 years
Maturity	10/26/2022
Issuing price	100% of nominal value
Redemption price	100% of nominal value
Coupon	7.75%
Interest payment	Quarterly
Subscription period*	10/09/2017-10/24/2017
Initial offering*	10/27/2017
Exchange offer	Exchange ratio for existing notes (ISIN DE000A1HELE2): 1:1 +1.75%
Exchange period*	09/25/2017-10/20/2017
Sole Lead Manager and Paying Agent	Dero Bank AG, Munich, Germany
Covenants	Dividend restriction (no dividend in the first two years, afterwards max. 50% if EBITDA interest coverage > 2) Equity ratio min. 25% (equity ratio = equity / equity + interest bearing liabilities) Pari passu Cross default Negative pledge Change of control-clause
Use of proceeds	Refinancing of outstanding bonds (ISIN DE000A1HELE2) Remaining proceeds will be invested with focus on Australia and Hungary

Source: Photon Energy N.V.

\* planned

*Exchange offer for currently  
outstanding 2013/18 bonds*

Prior to the private placement with institutional investors, the issuer plans a public offer in Luxembourg, Germany and Austria. There also will be an exchange offer to holders of the existing bond 2013/18 (ISIN DE000A1HELE2). They will have the opportunity to exchange their 2013/18 bond in the ratio 1:1 into the new 2017/22 bond (ISIN DE000A19MFH4). Hol-

<b>Photon Energy N.V.</b>			
<b>Cash flows of the bond</b>			
<b>Date</b>	<b>Description</b>	<b>Cash inflow (EURm)</b>	<b>Cash outflow (EURm)</b>
October 27, 2017	Gross proceeds	30.0	-
October 27, 2017	Issuing costs	-	1.1
January 27, April 27, July 27, October 27, 2018	Interest payments (quarterly)	-	2.3
January 27, April 27, July 27, October 27, 2019	Interest payments (quarterly)	-	2.3
January 27, April 27, July 27, October 27, 2020	Interest payments (quarterly)	-	2.3
January 27, April 27, July 27, October 27, 2021	Interest payments (quarterly)	-	2.3
October 27, 2022	Redemption payment	-	30.0
<b>Total</b>		<b>30.0</b>	<b>40.4</b>

Source: Independent Research; Photon Energy N.V.

ders will also receive an additional amount of EUR17.50 per exchanged 2013/18 bond. The planned exchange period is from 09/25/2017 to 10/20/2017.

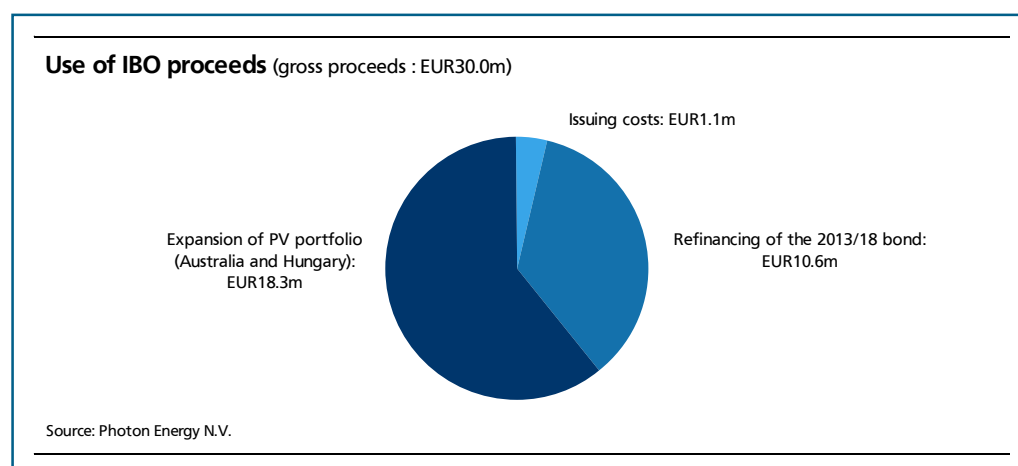
With regard to the substantial terms of the bond, it should be pointed out that the bond creditors do not have any statutory right of termination. Exceptions occur in the event of insolvency or liquidation of the company. The bonds constitute direct, unconditional, not subordinated and unsecured obligations of the issuer.

### Particularities

Like the previously issued 2013/18 bond the terms of the new bond include numerous covenants to protect investors. The new bond includes a set of "standard" covenants established in the bond market (negative pledge, change of control covenant, cross-default covenant) but also other covenants. There are payout restrictions. Photon Energy is not allowed to pay out any dividend for the financial years 2017 and 2018 (afterwards dividend of max. 50% of the distributable profit, if EBITDA interest-coverage >2). In addition, there is a minimum equity ratio of 25% (equity ratio defined as equity / equity + interest bearing liabilities).

Pursuant to the terms of the bond Interest payment will be made quarterly. The vast majority of bonds issued in Germany so far provide interest payment once a year. Based on a coupon of 7.75% per year, the (initial) annualised yield is 8.0% due to the quarterly interest payment.

*Numerous covenants to protect investors*



## Valuation

### Valuation summary

Coupon of 7.75% vs. median yield of peer group bonds of 3.8%

In order to evaluate the attractiveness of the Photon Energy bond 2017/22 (volume: up to EUR30.0m) we have compared the financial performance of the issuer with other producers of renewable energies. We have also looked at the bond yields of competitors. We think the Photon Energy bond 2017/22 offers attractive conditions given a coupon of 7.75% vs. a median yield of the peer group bonds of 3.8%. From our point of view, Photon Energy has to pay a higher coupon as the expansion of the IPP portfolio should result in temporarily below-average debt and equity ratios. There is also an inherent country and project risk. However, in contrast to many competitors Photon Energy should deliver improving cash flows. In addition, the Czech and Slovak solar plants are also a major asset for bond investors. At the end of 2022E, both portfolios should have repaid nearly all bank debt (complete repayment until 2024E). If need arises, there is the possibility to load new debt on the assets to redeem the bond 2017/22).

### Photon Energy still growing in contrast to peer group companies

CAGR adjusted EBITDA 2017E to 2020E: +26% vs. +3% at competitors

After a period of strong growth (median CAGR of peer group EBITDA 2013 to 2016: +35%) many competitors have entered a consolidation phase (median CAGR of peer group EBITDA 2017E to 2020E: +3%). This development reflects the scarcity of new profitable solar and wind park projects in many large renewable energy markets such as Germany, France or Italy due to fast falling feed-in tariffs. This leads to increasing M&A activities (e.g. Capital Stage / Chorus Clean Energy or Edison / Alerion Clean Power). In contrast, we expect Photon Energy to expand its IPP portfolio to 104.2 (currently: 25.6) MWp until 2019E by seizing the windows of opportunity in Hungary (newly built: +50.0 MWp) and Australia (newly built: +28.6 MWp). The

#### Photon Energy N.V.

##### Peer group: revenue, EBITDA and EBITDA margin

	Cur-rency	Price	MCap	EV	Revenue				CAGR	EBITDA				CAGR	EBITDA margin				Median
					2017E	2018E	2019E	2020E		17-20	2017E	2018E	2019E		2020E	17-20	2017E	2018E	
			(m)	(m)	(m)	(m)	(m)	(m)		(m)	(m)	(m)	(m)						
7C Solarparken	EUR	2.36	106	263	33	34	33	33	1%	28	29	28	29	1%	85%	85%	85%	85%	85%
Algonquin Power	CAD	13.00	4,970	10,381	2,123	2,260	2,909	2,691	8%	851	923	1,002	983	5%	40%	41%	34%	37%	38%
Arise	SEK	15.60	521	1,553	295	316	362	-	-	127	145	176	-	-	43%	46%	49%	-	46%
Atlantica Yield	USD	19.78	1,982	7,658	1,026	1,046	1,046	-	-	795	828	839	-	-	78%	79%	80%	-	79%
Aventron	CHF	8.90	304	683	76	81	88	96	8%	51	54	58	-	-	67%	67%	66%	-	67%
Capital Stage	EUR	6.21	796	2,058	226	240	252	-	-	175	184	193	-	-	77%	77%	77%	-	77%
Etrion	USD	0.24	79	323	25	31	-	-	-	7	15	-	-	-	27%	49%	-	-	38%
Greentech Energy	EUR	0.88	94	236	50	51	51	-	-	37	38	38	-	-	75%	75%	75%	-	75%
Saeta Yield	EUR	9.66	788	2,105	324	328	330	349	2%	231	234	234	233	0%	71%	71%	71%	67%	71%
Scatec Solar	NOK	44.00	4,541	8,888	1,138	1,630	2,790	-	-	894	1,324	2,425	-	-	79%	81%	87%	-	81%
Terna Energy	EUR	4.00	437	947	219	250	268	315	13%	124	154	169	173	12%	56%	62%	63%	55%	59%
Volitalia	EUR	11.15	546	952	185	284	391	-	-	75	117	170	-	-	40%	41%	43%	-	41%
Minimum	-	-	-	-	-	-	-	-	1%	-	-	-	-	0%	27%	41%	34%	37%	38%
Maximum	-	-	-	-	-	-	-	-	13%	-	-	-	-	12%	85%	85%	87%	85%	85%
Median	-	-	-	-	-	-	-	-	8%	-	-	-	-	3%	69%	69%	71%	61%	69%
Average	-	-	-	-	-	-	-	-	7%	-	-	-	-	5%	62%	65%	66%	61%	63%
Photon Energy	EUR	0.37	19	66	15	17	22	25	19%	8*	9*	13*	15*	26%	52%*	54%*	59%*	61%*	57%

Source: Independent Research; Bloomberg

\* adjusted EBITDA and adjusted EBITDA margin, respectively

closing prices as of 09/22/17

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## Photon Energy N.V.

## Peer group: cash flows

	Cur- rency	Cash flow (CF)				CAGR 17-20	CF / revenue				Med. 17-20	CF per share				CAGR 17-20	CF yield				Med. 17-20
		2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E		2017E	2018E	2019E	2020E	
		(m)	(m)	(m)	(m)																
7C Solarparken	EUR	19	23	23	23	7%	59%	69%	69%	70%	69%	0.43	0.52	0.51	0.52	7%	18%	22%	22%	22%	22%
Algonquin Power	CAD	493	555	631	-	-	23%	25%	22%	-	23%	1.29	1.45	1.65	-	-	10%	11%	13%	-	11%
Arise	SEK	106	129	144	-	-	36%	41%	40%	-	40%	3.18	3.85	4.31	-	-	20%	25%	28%	-	25%
Atlantica Yield	USD	372	423	443	-	-	36%	40%	42%	-	40%	3.71	4.22	4.42	-	-	19%	21%	22%	-	21%
Aventron	CHF	37	36	37	-	-	49%	44%	42%	-	44%	1.08	1.05	1.08	-	-	12%	12%	12%	-	12%
Capital Stage	EUR	117	129	124	131	4%	52%	54%	49%	-	52%	0.91	1.01	0.97	1.03	4%	15%	16%	16%	17%	16%
Etrion	USD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greentech Energy	EUR	26	28	29	-	-	52%	55%	57%	-	55%	0.24	0.26	0.27	-	-	27%	30%	31%	-	30%
Saeta Yield	EUR	165	169	172	-	-	51%	51%	52%	-	51%	2.02	2.07	2.11	-	-	21%	21%	22%	-	21%
Scatec Solar	NOK	301	961	511	-	-	26%	59%	18%	-	26%	2.92	9.31	4.96	-	-	7%	21%	11%	-	11%
Terna Energy	EUR	85	-	-	-	-	39%	-	-	-	39%	0.78	-	-	-	-	20%	-	-	-	20%
Voltaia	EUR	51	77	106	-	-	28%	27%	27%	-	27%	1.05	1.57	2.18	-	-	9%	14%	20%	-	14%
Minimum	-	-	-	-	-	4%	23%	25%	18%	70%	23%	-	-	-	-	4%	7%	11%	11%	17%	11%
Maximum	-	-	-	-	-	7%	59%	69%	69%	70%	69%	-	-	-	-	7%	27%	30%	31%	22%	30%
Median	-	-	-	-	-	5%	39%	48%	42%	70%	45%	-	-	-	-	5%	18%	21%	21%	19%	20%
Average	-	-	-	-	-	5%	41%	46%	42%	70%	44%	-	-	-	-	5%	16%	19%	20%	19%	19%
Photon Energy	EUR	3*	5*	8*	10*	43%	23%*	28%*	35%*	39%*	31%*	0.07*	0.10*	0.15*	0.19*	43%*	18%*	26%*	41%*	51%*	33%*

Source: Independent Research; Bloomberg

\* including interest paid/received

*Capacity expansion associated with uncertainties but also major boost for EBITDA*

planned capacity expansion is associated with some risks given the size of the projects, the political uncertainties in Hungary and the strong competition in Australia (relatively low revenue per kWh). However, this also allows Photon Energy to boost adjusted group EBITDA to EUR15.2m (2017E: 7.6m) in 2020E and EUR15.8m in 2022E.

## Photon Energy N.V.

## Peer group: net debt, equity, debt and equity ratios

	Cur- rency	Net debt				Equity				Net debt / EBITDA				Net gearing				Equity ratio			
		2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016	2013	2014	2015	2016
		(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)												
7C Solarparken	EUR	70	132	154	157	22	38	62	71	6.3	6.0	5.7	5.6	3.1	3.4	2.5	2.2	21%	18%	24%	25%
Algonquin Power	CAD	1,259	1,288	1,404	4,201	1,466	1,836	2,292	2,486	5.0	5.0	4.0	6.6	0.9	0.7	0.6	1.7	42%	45%	46%	30%
Arise	SEK	1,526	1,472	1,270	1,004	1,240	1,178	1,090	1,020	6.8	7.6	7.1	8.2	1.2	1.2	1.2	1.0	38%	40%	39%	41%
Atlantica Yield	USD	2,271	3,618	5,399	5,176	1,287	1,840	2,024	1,959	14.3	9.9	7.4	7.2	1.8	2.0	2.7	2.6	23%	23%	19%	19%
Aventron	CHF	52	80	189	322	36	75	76	189	8.9	8.1	9.0	8.0	1.5	1.1	2.5	1.7	33%	38%	25%	33%
Capital Stage	EUR	275	521	833	1,262	207	243	257	609	5.2	4.6	6.7	8.5	1.3	2.1	3.2	2.1	35%	25%	19%	26%
Etrion	USD	344	430	481	224	-11	33	6	-46	8.7	11.9	-	-	-	13.1	75.0	-	-2%	5%	1%	-16%
Greentech Energy	EUR	187	169	156	154	221	198	192	198	6.7	5.5	5.5	5.1	0.8	0.9	0.8	0.8	46%	45%	46%	46%
Saeta Yield	EUR	-	1,004	726	1,171	-	356	571	552	-	6.6	5.6	4.8	-	2.8	1.3	2.1	-	20%	35%	25%
Scatec Solar	NOK	1,339	2,439	3,819	3,954	399	1,177	1,425	1,313	-	6.4	4.5	4.7	3.4	2.1	2.7	3.0	11%	23%	18%	19%
Terna Energy	EUR	242	255	342	503	351	338	347	355	3.8	2.9	2.7	3.3	0.7	0.8	1.0	1.4	32%	30%	28%	25%
Voltaia	EUR	72	186	262	331	75	214	211	425	13.5	10.3	7.5	5.9	1.0	0.9	1.2	0.8	37%	51%	38%	44%
Minimum	-	-	-	-	-	-	-	-	-	3.8	2.9	2.7	3.3	0.7	0.7	0.6	0.8	-2%	5%	1%	-16%
Maximum	-	-	-	-	-	-	-	-	-	14.3	11.9	9.0	8.5	3.4	13.1	75.0	3.0	46%	51%	46%	46%
Median	-	-	-	-	-	-	-	-	-	6.8	6.5	5.7	5.9	1.3	1.6	1.9	1.7	33%	27%	26%	25%
Average	-	-	-	-	-	-	-	-	-	7.9	7.1	6.0	6.2	1.6	2.6	7.9	1.8	29%	30%	28%	26%
Photon Energy	EUR	52	50	46	47	27	28	29	24	18.0*	11.4*	7.4*	7.1*	1.9	1.8	1.6	1.9	29%	30%	32%	28%

Source: Independent Research; company information; Bloomberg

\* net financial debt / adjusted EBITDA

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Existing portfolio delivers FFO of EUR4.5m to EUR5.3m

Cash flow / revenue ratio improving but still below peer group level

Ratios move towards peer group level from 2020E onwards

Yield of Capital Stage's hybrid convertible of 4.3% reflects equity-like character

Like the peer group companies Photon Energy has a stable IPP portfolio. According to our calculations, from 2018E to 2022E the Czech and Slovak solar plants enable Photon Energy to generate annual EBITDA of EUR7.5m to EUR8.1m and annual FFO of EUR4.5m to EUR5.3m.

The growing portfolio enables Photon Energy to seize economies of scale leading to improving adjusted EBITDA margins (61% in 2020E vs. 52% in 2017E) and cash flow / revenue ratios (39% in 2020E vs. 23% in 2017E). Both ratios are still below the peer group level (median of 69% to 71% and median of 39% to 48%) since Photon Energy also operates lower margin business (e.g. O&M) and still pays higher interest rates (on average 4.7% vs. competitors with <2.0% to 2.5%).

#### Capacity expansion leads to debt and equity ratios below peer group level for some time

Many peer group companies have started to de-leverage (median of net debt / EBITDA ratio of 5.9 in 2016 vs. 6.8 in 2013). Until 2016 Photon Energy reported net debt / adjusted EBITDA ratios (2016: 7.1) and equity ratios (2016: 28%) similar to the peer group. Due to the expansion of the IPP portfolio we expect a temporarily increasing net debt / adjusted EBITDA ratio (peak: 7.0 in 2019E) and net gearing (peak: 2.4 in 2018E) as well as a decreasing equity ratio (low: 23% in 2017E and 2018E; equity ratio as defined in the bond covenants remains >25%). Photon Energy should report improving ratios from 2020E onwards when all new solar plants run at full capacity.

#### Attractive coupon compared to yields of peer group bonds

At the stock market, bonds of producers of renewable energies are trading with a median yield of 3.8% (median maturity: 5 years). This compares with a coupon of 7.75% for the Photon Energy bond 2017/22 (maturity: 5 years). From our point of view, these conditions are attractive. Compared to the peer group, the growth of the IPP portfolio comes at the expense of temporarily deteriorating debt and equity ratios as well as increasing country and project risk. However, in contrast to many competitors, Photon Energy is still growing, delivers improving cash flows and stable FFO from the solar plant portfolios in the Czech Republic and Slovakia.

Photon Energy N.V.								
Exchange traded bonds of producers of renewable energies								
Issuer	ISIN	Issuing volume	Duration			Coupon	Price	Yield
			Issued	Maturity	Years			
Algonquin Power 2011/18	CA01585PAA36	CAD135.0m	Jul. 11	Jul. 18	7.0	5.50%	102.9%	2.1%
Algonquin Power 2012/21	CA01585PAC91	CAD150.0m	Dec. 12	Feb. 21	8.2	4.82%	106.4%	2.8%
Algonquin Power 2014/22	CA01585PAE57	CAD200.0m	Feb. 14	Feb. 22	8.0	4.65%	106.7%	3.0%
Algonquin Power 2017/27	CA01585PAG06	CAD300.0m	Feb. 17	Feb. 27	10.0	4.09%	102.5%	3.8%
ARISE 2014/19	SE0005906849	SEK1.100.0m	Apr. 14	Apr. 19	5.0	3.00%	96.5%	5.3%
ARISE 2017/22 Wandler	SE0009607088	SEK244.7m	Mar. 17	Mar. 22	5.0	5.75%	99.4%	5.9%
Atlantica Yield 2014/19	US00289XAA72	USD255.0m	Nov. 14	Nov. 19	5.0	7.00%	107.0%	3.6%
Atlantica Yield 2015/34	XS1267075924	EUR285.0m	Sep. 15	Dec. 34	19.3	3.76%	98.0%	3.9%
Capital Stage hybrid convertible*	DE000A19NPE8	EUR97.3m	Sep. 17	n/a	-	5.25%	104.0%	4.3%*
Etrion 2014/19	NO0010709272	EUR40.0m	Apr. 14	Apr. 19	5.0	8.00%	100.9%	7.4%
PNE Wind 2013/18	DE000A1R0741	EUR100.0m	Jun. 13	Jun. 18	5.0	8.00%	103.1%	3.4%
Scatec Solar 2015/18	NO0010752298	NOK500.0m	Nov. 15	Nov. 18	3.0	7.31%	104.1%	3.6%
Terna Energy 2017/22	GRC8131177B5	EUR60.0m	Jul. 17	Jul. 22	5.0	3.85%	100.2%	3.8%
Minimum	-	-	-	-	3.0	3.0%	96.5%	2.1%
Maximum	-	-	-	-	19.3	8.0%	107.0%	7.4%
Median	-	-	-	-	5.0	5.3%	102.9%	3.8%
Average	-	-	-	-	7.1	5.5%	102.4%	4.1%
<b>Photon Energy</b>	<b>DE000A19MFH4</b>	<b>up to EUR30.0m</b>	<b>Oct. 17</b>	<b>Oct. 22</b>	<b>5.0</b>	<b>7.75%</b>	<b>100.0%</b>	<b>7.8%</b>

Source: Independent Research; Photon Energy N.V.; company information; Bloomberg \* coupon step-up to EUR swap + 11.0% after 5 years; yield for 5 years closing prices as of 09/22/17

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## Financial, balance sheet and earnings analysis

### Earnings analysis

*Improvement of EBITDA and FFO - sustainable break-even in the O&M segment*

#### Strategic and financial foundations laid for acceleration of growth

From a strategic and financial point of view, in the past years Photon Energy has laid the foundation for the expansion of its activities particularly in the Production of Electricity and O&M segments:

- Solid performance of proprietary PV plants (25.6 MWp; 100% basis) with increasing EBITDA and FFO due to cost optimisations (2017E: EUR9.6m (2013: 6.6) and EUR6.6m (2013: 3.7))
- Growth of the O&M segment into a critical size with > 200 (2013: 94) MWp of maintained capacities (market leader in the Czech Republic) and break-even in 2017E
- Strategic move into new markets (e.g. Romania in 2015 and Hungary in 2017) as well as important projects in Australia (construction of several rooftop solar plants; development of proprietary IPP projects such as Leeton and co-development projects such as Gunning)
- Reduction of the cost base (adjusted operating costs / revenue 2017E: 32% (2013: 42%) and net debt (end of 2017E vs. end of 2013: EUR-7.5m due to solid cash flows)

#### Quadrupling of proprietary IPP portfolio

*Expansion of high cash flow generating IPP portfolio*

With the proceeds from the IBO, Photon Energy intends to expand its proprietary IPP portfolio. From our point of view this makes sense - also for bond holders. First, the proprietary PV plants deliver the highest, most stable and best predictable cash flows in the group. Second, PV plants

Photon Energy N.V.												
Key figures												
EURm	H1 2016	H1 2017	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
Energy Solutions	0.3	0.7	1.4	0.6	2.3	1.2	1.2	2.5	3.2	3.2	3.3	3.3
Production of Electricity	5.6	6.4	11.2	10.2	10.6	10.9	11.8	14.1	18.8	21.1	21.3	21.6
O&M	1.0	1.6	2.2	1.8	1.9	2.7	3.6	4.5	5.0	5.2	5.4	5.7
FVE Investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other & Consolidation	-0.4	-0.7	-0.8	-0.8	-1.6	-1.7	-1.7	-3.7	-4.7	-4.7	-4.8	-4.8
<b>Revenue</b>	<b>6.5</b>	<b>8.0</b>	<b>13.9</b>	<b>11.8</b>	<b>13.3</b>	<b>13.1</b>	<b>14.8</b>	<b>17.4</b>	<b>22.3</b>	<b>24.7</b>	<b>25.2</b>	<b>25.7</b>
Adjusted operating costs	-	-	-5.9	-5.9	-3.8	-4.2	-4.8	-5.8	-6.7	-6.9	-7.0	-7.1
In % of revenue	-	-	-42.2%	-50.5%	-28.5%	-32.1%	-32.4%	-33.5%	-30.3%	-28.0%	-27.7%	-27.6%
Energy Solutions	-0.1	-0.1	-0.3	-0.3	-0.5	-0.6	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7
Production of Electricity	4.7	5.3	6.6	7.5	8.8	8.9	9.6	11.4	15.3	17.3	17.5	17.8
O&M	-0.3	0.3	-0.6	-1.0	-1.2	-0.3	0.3	0.5	0.6	0.6	0.7	0.8
FVE Investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other & Consolidation	-0.9	-1.3	-2.4	-2.8	-1.0	-1.4	-1.4	-1.7	-1.8	-1.8	-1.8	-1.8
<b>EBITDA</b>	<b>3.5</b>	<b>4.2</b>	<b>3.3</b>	<b>3.5</b>	<b>6.1</b>	<b>6.6</b>	<b>7.7</b>	<b>9.6</b>	<b>13.4</b>	<b>15.5</b>	<b>15.8</b>	<b>16.1</b>
EBITDA margin	53.4%	52.2%	23.9%	29.7%	46.1%	50.0%	52.2%	55.1%	60.2%	62.5%	62.5%	62.5%
<b>Adjusted EBITDA</b>	<b>-</b>	<b>-</b>	<b>3.5</b>	<b>4.5</b>	<b>6.5</b>	<b>6.5</b>	<b>7.6</b>	<b>9.4</b>	<b>13.2</b>	<b>15.2</b>	<b>15.5</b>	<b>15.8</b>
Adjusted EBITDA margin	-	-	24.9%	38.2%	48.6%	49.8%	51.5%	54.2%	59.0%	61.3%	61.4%	61.3%
<b>Net income</b>	<b>-1.0</b>	<b>0.1</b>	<b>-5.0</b>	<b>-5.0</b>	<b>-1.7</b>	<b>-2.7</b>	<b>-0.2</b>	<b>-1.4</b>	<b>-0.3</b>	<b>1.1</b>	<b>1.6</b>	<b>2.4</b>
<b>Funds from operations (FFO)</b>	<b>1.9</b>	<b>2.6</b>	<b>-0.6</b>	<b>1.4</b>	<b>3.2</b>	<b>2.9</b>	<b>4.3</b>	<b>4.8</b>	<b>7.8</b>	<b>9.5</b>	<b>10.1</b>	<b>10.8</b>
FFO in % of revenue	29.5%	32.7%	neg.	11.7%	23.7%	22.0%	29.0%	27.9%	34.8%	38.6%	39.9%	41.9%
<b>Net financial debt (end of period)</b>	<b>48.7</b>	<b>47.0</b>	<b>51.6</b>	<b>50.4</b>	<b>45.7</b>	<b>47.1</b>	<b>44.1</b>	<b>84.6</b>	<b>98.7</b>	<b>89.1</b>	<b>78.9</b>	<b>68.1</b>
<b>Net financial debt / adjusted EBITD.</b>	<b>7.3</b>	<b>6.5</b>	<b>18.0</b>	<b>11.4</b>	<b>7.4</b>	<b>7.1</b>	<b>6.0</b>	<b>6.8</b>	<b>7.0</b>	<b>6.2</b>	<b>5.4</b>	<b>4.7</b>

Source: Independent Research; Photon Energy N.V.

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## Photon Energy N.V.

## Segment Production of Electricity: capacities and revenue

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
Czech Republic	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Slovakia (incl. joint ventures)	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
Hungary	0.0	0.0	0.0	0.0	0.5	25.5	50.0	50.0	50.0	50.0
Australia	0.1	0.1	0.1	0.1	0.1	28.7	28.7	28.7	28.7	28.7
Others	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Installed capacity at year end (MWp)</b>	<b>27.0</b>	<b>27.1</b>	<b>25.6</b>	<b>25.6</b>	<b>26.1</b>	<b>79.7</b>	<b>104.2</b>	<b>104.2</b>	<b>104.2</b>	<b>104.2</b>
<b>Consolidated installed capacity at year end (MWp)</b>	<b>24.2</b>	<b>24.2</b>	<b>22.7</b>	<b>22.7</b>	<b>23.2</b>	<b>76.8</b>	<b>101.3</b>	<b>101.3</b>	<b>101.3</b>	<b>101.3</b>
Average installed capacity (MWp)	27.0	25.6	25.6	25.6	25.6	50.5	89.9	104.2	104.2	104.2
Average consolidated installed capacity (MWp)	24.2	22.7	22.7	22.7	22.8	47.7	87.0	101.3	101.3	101.3
Czech Republic	-	-	-	-	1,222	1,175	1,175	1,175	1,175	1,175
Slovakia (incl. joint ventures)	-	-	-	-	1,222	1,175	1,175	1,175	1,175	1,175
Hungary	-	-	-	-	1,250	1,250	1,250	1,250	1,250	1,250
Australia	-	-	-	-	1,597	1,641	1,641	1,641	1,641	1,641
Others	-	-	-	-	-	-	-	-	-	-
<b>Average power output (kWh/kWp)</b>	-	-	-	-	<b>1,226</b>	<b>1,365</b>	<b>1,336</b>	<b>1,336</b>	<b>1,336</b>	<b>1,336</b>
<b>Average consolidated power output (kWh/kWp)</b>	-	-	-	-	<b>1,226</b>	<b>1,372</b>	<b>1,340</b>	<b>1,340</b>	<b>1,340</b>	<b>1,340</b>
Czech Republic	14,626	15,002	15,953	15,251	15,819	15,210	15,210	15,210	15,210	15,210
Slovakia (incl. joint ventures)	10,494	10,228	10,872	10,650	10,983	10,561	10,561	10,561	10,561	10,561
Hungary	0	0	0	0	60	14,063	47,240	66,125	66,125	66,125
Australia	147	200	190	188	196	21,782	43,371	43,371	43,371	43,371
Others	1,631	0	0	0	0	0	0	0	0	0
<b>Production of electricity (MWh)</b>	<b>26,898</b>	<b>25,430</b>	<b>27,015</b>	<b>26,089</b>	<b>27,057</b>	<b>61,616</b>	<b>116,382</b>	<b>135,267</b>	<b>135,267</b>	<b>135,267</b>
<b>Consolidated production of electricity (MWh)</b>	<b>24,032</b>	<b>22,637</b>	<b>24,046</b>	<b>23,181</b>	<b>24,058</b>	<b>58,732</b>	<b>113,498</b>	<b>132,384</b>	<b>132,384</b>	<b>132,384</b>
Czech Republic	52.47	49.50	49.95	50.41	52.82	54.32	55.41	56.52	57.65	58.80
Slovakia (incl. joint ventures)	42.51	42.51	42.51	42.51	42.51	42.51	42.51	42.51	42.51	42.51
Hungary	-	-	-	-	-	10.33	10.44	10.54	10.65	10.75
Australia	21.90	20.47	20.40	20.26	20.15	5.06	5.06	5.14	5.21	5.29
Others	-	-	-	-	-	-	-	-	-	-
<b>Average feed-in tariff (cent/kWh)</b>	<b>45.98</b>	<b>44.62</b>	<b>43.91</b>	<b>46.40</b>	<b>48.30</b>	<b>24.84</b>	<b>17.22</b>	<b>16.47</b>	<b>16.68</b>	<b>16.88</b>
<b>Consolidated average feed-in tariff (cent/kWh)</b>	<b>46.39</b>	<b>44.88</b>	<b>44.08</b>	<b>46.89</b>	<b>49.03</b>	<b>23.97</b>	<b>16.58</b>	<b>15.91</b>	<b>16.11</b>	<b>16.33</b>
Czech Republic	7.7	7.4	8.0	7.7	8.4	8.3	8.4	8.6	8.8	8.9
Slovakia (incl. joint ventures)	4.5	4.3	4.6	4.5	4.7	4.5	4.5	4.5	4.5	4.5
Hungary	0.0	0.0	0.0	0.0	0.0	1.5	4.9	7.0	7.0	7.1
Australia	0.0	0.0	0.0	0.0	0.0	1.1	2.2	2.2	2.3	2.3
Others and eliminations	0.2	-0.5	-0.8	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
<b>Revenue (EURm)</b>	<b>12.4</b>	<b>11.3</b>	<b>11.9</b>	<b>12.1</b>	<b>13.1</b>	<b>15.3</b>	<b>20.0</b>	<b>22.3</b>	<b>22.6</b>	<b>22.8</b>
<b>Consolidated revenue</b>	<b>11.1</b>	<b>10.2</b>	<b>10.6</b>	<b>10.9</b>	<b>11.8</b>	<b>14.1</b>	<b>18.8</b>	<b>21.1</b>	<b>21.3</b>	<b>21.6</b>

Source: Independent Research; Photon Energy N.V.

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*Window of opportunity in Hungary...*


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*...and large-scale projects in Australia with high power output*


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represent the most valuable asset. Third, a larger portfolio allows to seize economies of scale particularly in O&M. So, there is significant upside potential to further optimise the cost base.

Based on the IBO proceeds available for growing the proprietary IPP portfolio (EUR18.3m), we expect Photon Energy to expand its capacities to 104.2 MWp (100% basis) until the end of 2019E. We think there is a particularly good chance to build up the IPP portfolio in Hungary (+50.0 MWp) since there exists an attractive window of opportunity (guaranteed feed-in tariff of the KÁT scheme of euro cent 10.33/kWh has become profitable due to decreasing construction costs for solar plants). Australia (proprietary IPP portfolio project Leeton with 28.6 MWp; land secured and construction application submitted; grid connection already secured) is attractive due to the high power output (about 1,650 (Czech Republic: 1.200) kWh/kWp). However, the contribution to the EBITDA of the segment Production of Electricity should be lower than in Hungary (2022E:

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## Photon Energy N.V.

## Segment Production of Electricity: revenue and profitability

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>Revenue</b>	<b>11.1</b>	<b>10.2</b>	<b>10.6</b>	<b>10.9</b>	<b>11.8</b>	<b>14.1</b>	<b>18.8</b>	<b>21.1</b>	<b>21.3</b>	<b>21.6</b>
Cost of sales	-1.0	-0.2	-0.6	-0.9	-1.1	-1.2	-1.6	-1.8	-1.8	-1.8
Energy tax	-1.9	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-0.9
<b>Gross profit</b>	<b>8.3</b>	<b>9.3</b>	<b>9.3</b>	<b>9.2</b>	<b>9.9</b>	<b>12.1</b>	<b>16.4</b>	<b>18.4</b>	<b>18.6</b>	<b>18.9</b>
Gross margin	74.1%	91.7%	87.6%	84.3%	83.9%	85.6%	87.0%	87.4%	87.4%	87.4%
Other income	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.2	0.2	0.2
Administration and other expenses	-1.7	-1.8	-0.5	-0.4	-0.4	-0.7	-1.2	-1.3	-1.3	-1.3
<b>EBITDA</b>	<b>6.6</b>	<b>7.5</b>	<b>8.8</b>	<b>8.9</b>	<b>9.6</b>	<b>11.4</b>	<b>15.3</b>	<b>17.3</b>	<b>17.5</b>	<b>17.8</b>
EBITDA margin	59.0%	74.2%	82.9%	82.1%	81.1%	81.3%	81.6%	82.2%	82.2%	82.3%
Depreciation and amortisation	-4.8	-4.4	-5.0	-5.2	-5.2	-6.5	-8.4	-8.9	-8.9	-8.9
Financial result	-2.5	-4.9	-2.0	-5.0	-2.1	-4.2	-4.7	-4.7	-4.4	-3.8
Income tax	-0.3	0.0	-0.6	-0.5	-0.2	-0.1	-0.3	-0.6	-0.6	-0.8
Others	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>-1.0</b>	<b>-1.8</b>	<b>1.4</b>	<b>-1.8</b>	<b>2.1</b>	<b>0.6</b>	<b>1.9</b>	<b>3.2</b>	<b>3.6</b>	<b>4.3</b>

Source: Independent Research; Photon Energy N.V.

11% vs. 35%: share of capacity: 28% vs. 48% in Hungary) due to lower revenue per kWh (cf. table on page 15). Also, the project is larger and associated with slightly higher uncertainty.

## Segments Production of Electricity and O&amp;M grow together

Due to the expansion of the IPP portfolio we expect revenue to significantly increase in both segments, Production of Electricity (2022E: EUR21.6m (2017E: 11.8)) and O&M (2022E: EUR5.7m (2017E: 3.6)). Photon Energy will do O&M for all of its new proprietary solar plants and we are confident that the company will acquire further O&M contracts from third parties (mainly in the markets Hungary and Romania). With respect to EBITDA we forecast significant economies

*Larger portfolio finally allows to realise economies of scale*

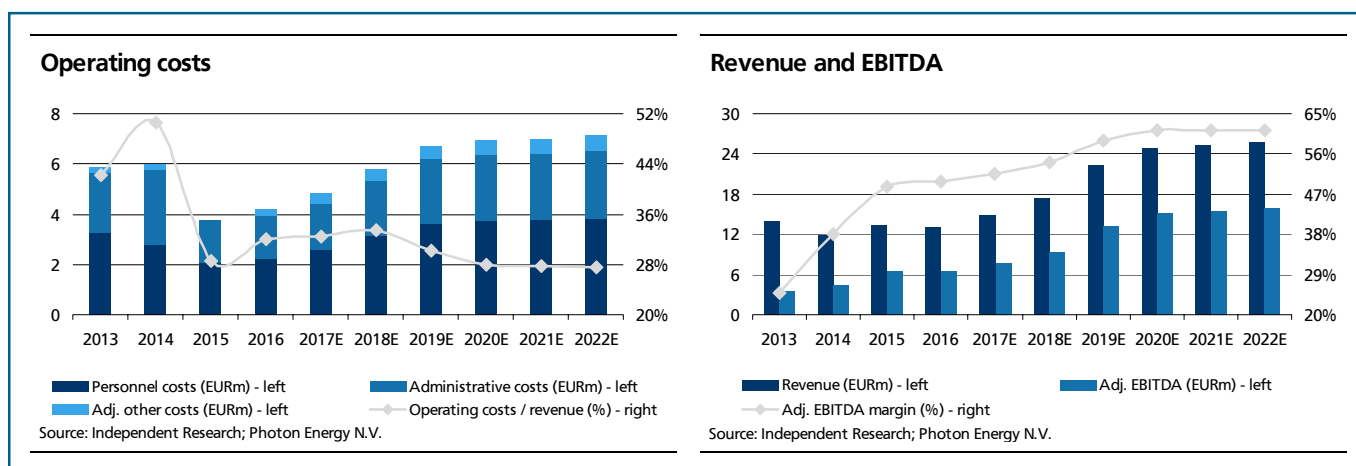
## Photon Energy N.V.

## Segment O&amp;M: revenue and profitability

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
Externally managed O&M capacities (MWh)	66.7	95.4	132.0	171.9	174.9	184.9	194.9	204.9	214.9	224.9
Internally managed O&M capacities (MWh)	27.0	27.1	25.6	25.6	26.1	79.7	104.2	104.2	104.2	104.2
<b>Total managed O&amp;M capacities (MWh)</b>	<b>93.8</b>	<b>122.5</b>	<b>157.6</b>	<b>197.5</b>	<b>201.0</b>	<b>264.6</b>	<b>299.1</b>	<b>309.1</b>	<b>319.1</b>	<b>329.1</b>
<b>Revenue</b>	<b>2.2</b>	<b>1.8</b>	<b>1.9</b>	<b>2.7</b>	<b>3.6</b>	<b>4.5</b>	<b>5.0</b>	<b>5.2</b>	<b>5.4</b>	<b>5.7</b>
Cost of sales	-0.3	-0.2	-0.8	-0.9	-1.1	-1.5	-1.6	-1.7	-1.8	-1.8
Energy tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Gross profit</b>	<b>1.8</b>	<b>1.6</b>	<b>1.2</b>	<b>1.8</b>	<b>2.5</b>	<b>3.0</b>	<b>3.4</b>	<b>3.5</b>	<b>3.7</b>	<b>3.8</b>
Gross margin	83.8%	87.8%	59.5%	67.6%	70.0%	67.5%	67.5%	67.5%	67.5%	67.5%
Other income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Administration and other expenses	-2.5	-2.6	-2.3	-2.2	-2.2	-2.6	-2.9	-2.9	-3.0	-3.1
<b>EBITDA</b>	<b>-0.6</b>	<b>-1.0</b>	<b>-1.2</b>	<b>-0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.6</b>	<b>0.6</b>	<b>0.7</b>	<b>0.8</b>
EBITDA margin	neg.	neg.	neg.	neg.	8.1%	10.3%	11.2%	12.1%	13.6%	14.1%
Depreciation and amortisation	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Financial result	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Income tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Others	0.5	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>-0.1</b>	<b>-1.1</b>	<b>-1.6</b>	<b>-0.4</b>	<b>0.2</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>0.7</b>

Source: Independent Research; Photon Energy N.V.

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of scale particularly in the O&M business (higher utilisation of personnel capacities centralised in the Czech Republic and Slovakia).

*Ramp-up costs and costs for co-development projects included in forecasts*

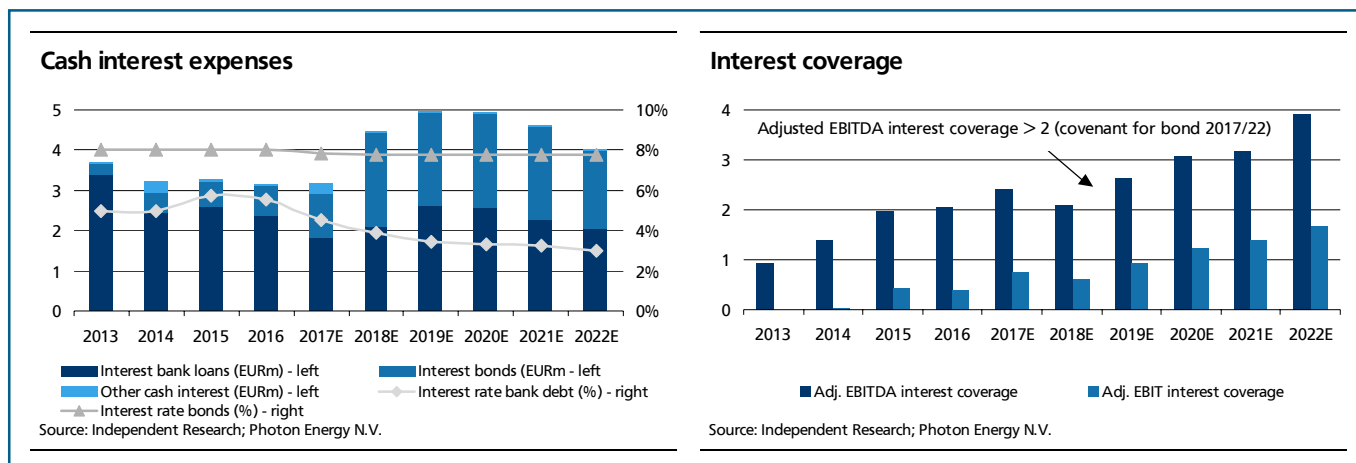
In 2022E we forecast group revenue of EUR25.7m (2017E: 14.8) and group EBITDA of EUR16.1m (2017E: 7.7). Our forecasts do not consider possible contributions from construction services (segment Energy Solutions) for internal or external parties. We feel this should not be the main focus due to the volatile and low-margin business and project/guarantee risks. However, we have included ramp-up costs for the new solar plants and project development costs for the solar projects in our operating costs forecasts (2017e: 32%; 2018E: 34%; 2022E: 28% of revenue).

*Lower interest rates for new projects - repayment of expensive existing loans*

Net income is no relevant key figure as it is influenced by the usual depreciation on solar plants. From 2017E to 2019E comprehensive income includes non-cash profits from the fair value revaluation of the new solar plants. Interest expenses remain considerable with on average 4.7% (2017E: 5.2%) of financial debt (competitors with refinancing interest rates of < 2.0% to 2.5%).

*Upside potential due to possible sale of co-development projects*

We identify additional upside potential because of the large co-development solar plant projects in Australia (capacity: 1,387 MWP; share of Photon Energy: mostly 51%). As outlined we included associated operating costs in our P&L forecasts. There is the potential for significant income from the sale of equity stakes in the Australian SPVs not considered in our estimates. We also feel that there will be additional opportunities to expand the proprietary IPP portfolio after 2019E.



## Financial analysis

*Required capital: EUR13.7m  
 (peak in 2018E: 19.0)*

*Bond proceeds important  
 for Australian project*

*Debt ratios should reach  
 peer group level after  
 plants run at full capacity*

*Track record of improving  
 EBITDA and FFO*

### Total capex estimated at just below EUR70m

Based on an assumed capex of EUR0.9m/MWp for the Hungarian (50.0 MWp) and EUR0.8m/MWp for the Australian solar plants (28.6 MWp) we forecast total capex of EUR68.1m for the expansion of the IPP portfolio from 2017E to 2020E (plus minor other investments). In the mid-term we expect the required equity at 15% in Hungary (banks tend to attribute high fair values to solar plants and to accept low equity) and at 30% in Australia - i.e. in total EUR13.7m.

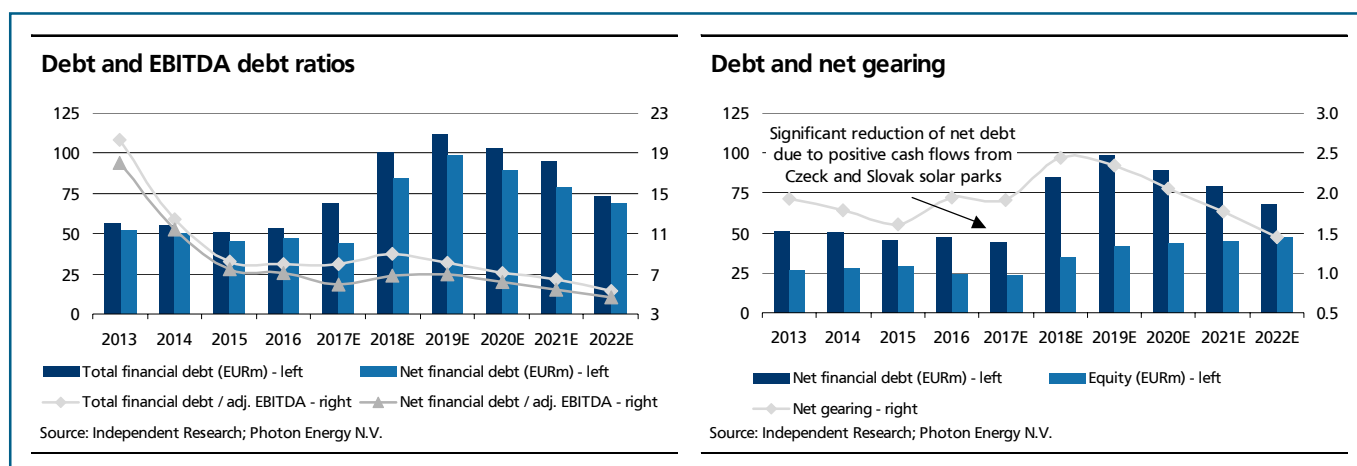
During the first construction phase (capex of EUR45.6m only in 2018E) the initial equity requirement should be higher. Given the construction time for a solar plant of 4 to 6 (on average: 5) months Photon Energy might need capital of EUR19.0m at the peak prior to refinancing the commissioned solar plants with bank debt (interest rate: 2% to 3%). This corresponds with the bond proceeds available for growth financing of EUR18.3m. For the Australian Leeton project (capex: EUR23.1m), the bond proceeds might be used even longer than assumed (in return lower equity requirements in Hungary). At the time of refinancing, banks demand Photon Energy to hedge cash flows by closing long-term power purchase agreements (PPA) with utilities at less favourable prices (about AUD cent 7.00/kWh vs. AUD cent 16.31/kWh on the spot market).

### Development of debt and debt ratios reflect temporary ramp-up of new solar plants

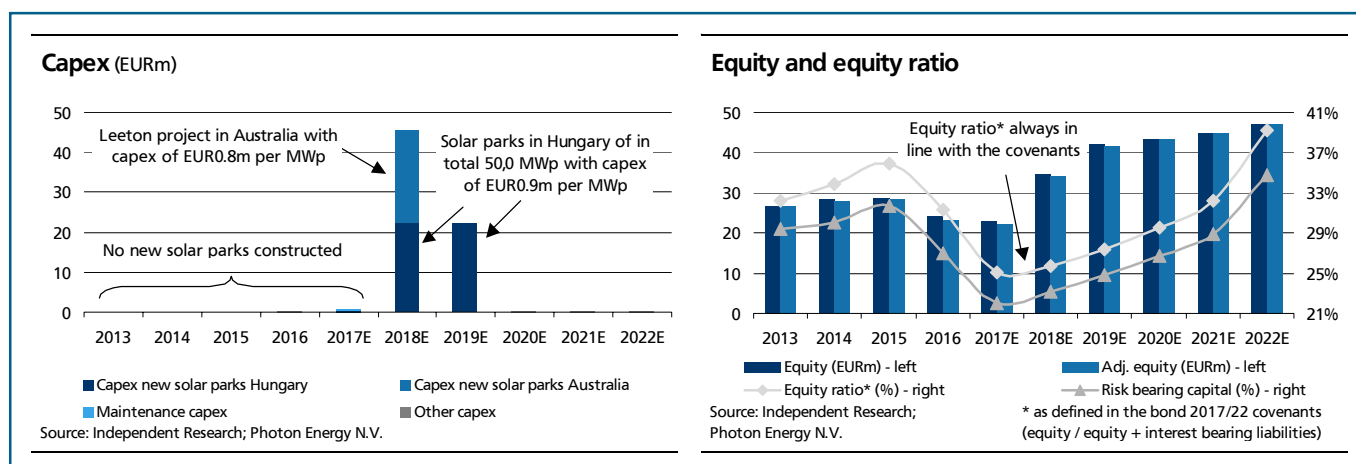
In line with the high capex we expect net financial debt to increase until reaching its peak at EUR98.7m (end of 2017E: 44.1) at the end of 2019E. The same is true for the leverage ratios (net debt / adjusted EBITDA: peak at 7.0 in 2019E; net gearing: peak at 2.0 in 2018E) which should reach the peer group level (net debt / adjusted EBITDA: < 6; net gearing: < 2) after electricity production has achieved its full run-rate in 2020E. The equity ratio (as defined in the bond 2017/22 covenants; i.e. equity / equity + interest bearing liabilities) should temporarily drop to 25% (which is in line with the covenants of minimum 25%) before returning to significantly >30%.

### Solar plants and O&M main contributors to FFO

From the perspective of the bond holders, we feel the generation of EBITDA and FFO is the most important factor. Photon Energy has a convincing track record with steadily increasing EBITDA and FFO both on group level (EBITDA CAGR 2013 to 2016: +26%; in 2016 FFO



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decreased due to higher tax payments) as well as on segment level (segment Production of Electricity: EBITDA CAGR 2013 to 2016: +11%; in 2016 segment FFO burdened by about EUR2m due to internal expense consolidation effects).

CAGR FFO 2017E to 2022E:  
+20%

Until 2022E, we forecast group FFO to further increase to EUR10.8m (2017E: 4.3). Growth is driven by the expansion of the IPP portfolio resulting in surging FFO contributions of the segments Production of Electricity (2022E: EUR12.9m (2017E: 6.6)) and O&M (2022E: EUR0.6m (2017E: 0.2); benefits from larger O&M portfolio). Economies of scale (e.g. critical size of O&M segment) ought to result in improving FFO / revenue ratios (group level 2022E: 42% (2017E: 29%)). This ratio is still slightly below the peer group level since Photon Energy has lower margin

Photon Energy N.V.										
FFO calculation										
EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>EBITDA</b>	<b>3.3</b>	<b>3.5</b>	<b>6.1</b>	<b>6.6</b>	<b>7.7</b>	<b>9.6</b>	<b>13.4</b>	<b>15.5</b>	<b>15.8</b>	<b>16.1</b>
Change in allowances	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other income	0.0	0.0	0.0	-0.4	-0.1	-0.2	-0.3	-0.3	-0.3	-0.3
Receivable write-offs	0.1	0.9	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Penalties and fines	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
<b>Adjusted EBITDA</b>	<b>3.5</b>	<b>4.5</b>	<b>6.5</b>	<b>6.5</b>	<b>7.6</b>	<b>9.4</b>	<b>13.2</b>	<b>15.2</b>	<b>15.5</b>	<b>15.8</b>
Interest received	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Interest expenses	-3.7	-2.9	-3.2	-3.1	-3.2	-4.5	-5.0	-4.9	-4.6	-4.0
Taxes paid	-0.4	-0.2	-0.1	-0.5	-0.2	-0.2	-0.5	-0.8	-0.9	-1.0
<b>Funds from operations (FFO)</b>	<b>-0.6</b>	<b>1.4</b>	<b>3.2</b>	<b>2.9</b>	<b>4.3</b>	<b>4.8</b>	<b>7.8</b>	<b>9.5</b>	<b>10.1</b>	<b>10.8</b>
of which Energy Solutions	-0.2	-0.1	-0.4	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
of which Production of Electricity	3.7	5.3	6.0	3.9	6.6	7.0	10.0	11.7	12.2	12.9
of which O&M	-0.6	-0.5	-1.0	-0.4	0.2	0.3	0.4	0.4	0.5	0.6
of which FVE Investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
of which Others & Consolidation	-3.5	-3.2	-1.4	0.1	-1.6	-1.7	-1.9	-1.8	-1.9	-1.9
Cash earnings incl. interests	0.6	3.0	4.7	-0.3	3.4	5.1	8.1	9.9	10.5	11.2
Operating cash flow incl. interests	-1.5	1.3	3.0	-1.1	3.3	4.9	7.7	9.7	10.4	11.2
Free cash flow (FCF)	-1.5	1.3	3.0	-1.5	2.8	-40.7	-14.4	9.4	10.1	10.9
FFO / revenue	neg.	11.7%	23.7%	22.0%	29.0%	27.9%	34.8%	38.6%	39.9%	41.9%
Cash earnings incl. interests / revenue	4.6%	25.4%	35.6%	neg.	22.6%	29.4%	36.4%	40.1%	41.5%	43.5%
Operating cash flow incl. interests / revenue	neg.	11.2%	22.4%	neg.	22.5%	28.3%	34.6%	39.3%	41.3%	43.3%
FCF / revenue	neg.	11.2%	22.4%	neg.	19.0%	neg.	neg.	38.1%	40.1%	42.2%

Source: Independent Research; Photon Energy N.V.

## Photon Energy N.V.

## Segment Production of Electricity: FFO of solar park portfolios

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>Czech Republic</b>										
Revenue	7.7	7.4	8.0	7.7	8.4	8.3	8.4	8.6	8.8	8.9
Adjusted EBITDA	4.0	5.6	6.5	6.1	6.5	6.4	6.4	6.5	6.7	6.8
Adjusted EBITDA margin	51.7%	75.0%	81.0%	79.1%	78.0%	76.9%	75.7%	75.9%	76.0%	76.1%
Interest received	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Interest expenses (excl. bond)	-1.6	-1.3	-1.2	-2.7	-1.3	-1.1	-1.0	-0.8	-0.7	-0.6
Taxes paid	-0.2	0.0	-0.4	-0.3	-0.2	-0.1	-0.2	-0.3	-0.4	-0.4
<b>Funds from operations (FFO)</b>	<b>2.3</b>	<b>4.2</b>	<b>4.9</b>	<b>3.2</b>	<b>5.2</b>	<b>5.2</b>	<b>5.2</b>	<b>5.4</b>	<b>5.7</b>	<b>5.9</b>
FFO / revenue	30.6%	57.1%	62.0%	42.0%	62.7%	63.3%	62.3%	63.3%	64.9%	65.8%
Repayment of bank debt	-	-	-	-	-	-2.6	-3.2	-3.2	-3.2	-3.2
<b>FFO after repayment of bank debt</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2.6</b>	<b>2.0</b>	<b>2.2</b>	<b>2.5</b>	<b>2.7</b>
Bank debt at year end	-	-	-	-	26.1	23.5	20.2	17.0	13.8	10.6
Years to repay all debt (bank debt / FFO)	-	-	-	-	5.0	4.5	3.9	3.1	2.4	1.8
<b>Slovakia</b>										
Revenue	3.2	3.2	3.4	3.3	3.4	3.3	3.3	3.3	3.3	3.3
Adjusted EBITDA	2.5	2.7	3.0	2.9	3.0	2.8	2.8	2.8	2.8	2.8
Adjusted EBITDA margin	76.6%	84.2%	90.4%	89.2%	88.0%	86.9%	85.7%	85.9%	86.0%	86.1%
Interest received	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Interest expenses (excl. bond)	-0.8	-0.7	-0.6	-1.4	-0.6	-0.5	-0.5	-0.4	-0.3	-0.2
Taxes paid	-0.1	0.0	-0.2	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.2
<b>Funds from operations (FFO)</b>	<b>1.6</b>	<b>2.0</b>	<b>2.3</b>	<b>1.5</b>	<b>2.4</b>	<b>2.3</b>	<b>2.3</b>	<b>2.3</b>	<b>2.4</b>	<b>2.4</b>
FFO / revenue	50.8%	62.9%	68.0%	45.3%	70.6%	70.7%	69.6%	71.2%	73.4%	75.0%
Repayment of bank debt	-	-	-	-	-	-1.8	-1.9	-1.9	-1.9	-1.9
<b>FFO after repayment of bank debt</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.5</b>	<b>0.4</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>
Bank debt at year end	-	-	-	-	12.1	11.2	9.3	7.4	5.5	3.6
Years to repay all debt (bank debt / FFO)	-	-	-	-	5.1	4.9	4.1	3.2	2.3	1.5
<b>Hungary</b>										
Revenue	0.0	0.0	0.0	0.0	0.0	1.5	4.9	7.0	7.0	7.1
Adjusted EBITDA	0.0	0.0	0.0	0.0	0.0	1.3	4.2	6.0	6.1	6.1
Adjusted EBITDA margin	-	-	-	-	88.0%	86.9%	85.7%	85.9%	86.0%	86.1%
Interest received	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Interest expenses (excl. bond)	0.0	0.0	0.0	0.0	0.0	-0.3	-0.8	-1.1	-1.0	-1.0
Taxes paid	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.3	-0.3
<b>Funds from operations (FFO)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>3.3</b>	<b>4.7</b>	<b>4.9</b>	<b>4.9</b>
FFO / revenue	-	-	-	-	86.6%	67.2%	67.3%	68.0%	68.9%	68.8%
Repayment of bank debt	-	-	-	-	-	0.0	-1.2	-2.1	-2.1	-2.1
<b>FFO after repayment of bank debt</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1.0</b>	<b>2.1</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>
Bank debt at year end	-	-	-	-	0.0	19.1	36.7	34.5	32.4	30.2
Years to repay all debt (bank debt / FFO)	-	-	-	-	0.0	19.6	11.1	7.3	6.7	6.2
<b>Australia</b>										
Revenue	0.0	0.0	0.0	0.0	0.0	1.1	2.2	2.2	2.3	2.3
Adjusted EBITDA	0.0	0.0	0.0	0.0	0.0	1.0	1.9	1.9	1.9	2.0
Adjusted EBITDA margin	76.6%	84.2%	90.4%	89.2%	88.0%	86.9%	85.7%	85.9%	86.0%	86.1%
Interest received	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenses (excl. bond)	0.0	0.0	0.0	0.0	0.0	-0.2	-0.3	-0.3	-0.3	-0.3
Taxes paid	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
<b>Funds from operations (FFO)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.8</b>	<b>1.5</b>	<b>1.6</b>	<b>1.6</b>	<b>1.6</b>
FFO / revenue	74.0%	84.2%	83.3%	82.9%	86.6%	72.1%	69.6%	70.1%	71.1%	71.3%
Repayment of bank debt	-	-	-	-	-	0.0	-1.2	-1.2	-1.2	-1.2
<b>FFO after repayment of bank debt</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.8</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>
Bank debt at year end	-	-	-	-	0.0	16.2	14.9	13.7	12.4	11.2
Years to repay all debt (bank debt / FFO)	-	-	-	-	0.0	20.3	9.8	8.8	7.7	6.8
<b>Total segment Production of Electricity</b>										
Sum of funds from operations (FFO)	4.0	6.3	7.3	4.7	7.7	9.3	12.4	14.1	14.5	14.9
Eliminations and adjustments	0.0	-0.5	-0.6	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
FFO after eliminations and adjustments	4.0	5.7	6.6	4.6	7.7	9.3	12.4	14.1	14.5	14.9
Interest expenses bonds	-0.3	-0.5	-0.6	-0.8	-1.1	-2.3	-2.3	-2.3	-2.3	-1.9
<b>Funds from operations (FFO)</b>	<b>3.7</b>	<b>5.3</b>	<b>6.0</b>	<b>3.9</b>	<b>6.6</b>	<b>7.0</b>	<b>10.0</b>	<b>11.7</b>	<b>12.2</b>	<b>12.9</b>
FFO / revenue	33.5%	51.8%	56.6%	35.4%	55.6%	49.6%	53.3%	55.8%	57.3%	59.8%
Repayment of bank debt	-	-	-	-	-	-4.4	-7.6	-8.5	-8.5	-8.5
<b>FFO after repayment of bank debt</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2.6</b>	<b>2.5</b>	<b>3.2</b>	<b>3.7</b>	<b>4.4</b>
Bank debt at year end	-	-	-	-	38.2	70.0	81.1	72.6	64.1	55.6
Years to repay all debt (bank debt / FFO)	-	-	-	-	5.8	10.0	8.1	6.2	5.2	4.3

Source: Independent Research; Photon Energy N.V.

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FFO / revenue ratio in segment Production of Electricity on peer group level

businesses (e.g. FFO / revenue in the O&M segment in 2022E: 11% (2017E: 5%)) and still pays relatively high interest rates. However, Photon Energy excels with a high FFO / revenue ratio in the segment Production of Electricity (2022E: 60% (2017E: 56%)).

Hungarian IPP projects with high FFO contributions and high importance

**Significant assets and potential leverage of solar plant assets in 2022E as safety net**

Within the segment Production of Electricity, the Czech and Slovak portfolios remain important FFO contributors (combined share 2022E: 56%) thanks to the high feed-in tariffs. Note should be given to the high expected FFO contribution of the Hungarian portfolio (share 2022E: 33%) because of the planned size (50.0 MWp) and solid feed-in tariffs. Therefore, we feel the realisation of the Hungarian projects is more important than the realisation of the Australian ones.

After annual repayment of the bank debt and of all interest both all regional IPP portfolios and the segment Production of Electricity achieve positive cash flows (EUR2.5m to EUR4.4m p.a.). For bond investors it is important to note that all bank debt will be repaid prior to the phase-out of the guaranteed feed-in tariffs:

- Czech portfolio: bank debt repayment: 2024E; end of feed-in tariffs: mostly 2030E
- Slovak portfolio: bank debt repayment: 2024E; end of feed-in tariffs: 2025E/2026E
- Hungarian portfolio: bank debt repayment: 2029E; end of feed-in tariffs: 2043E to 2045E
- Australian portfolio: bank debt repayment: 2029E; end of tariffs: 2030E

Leveraging of nearly debt-free IPP portfolios - proceeds for bond redemption

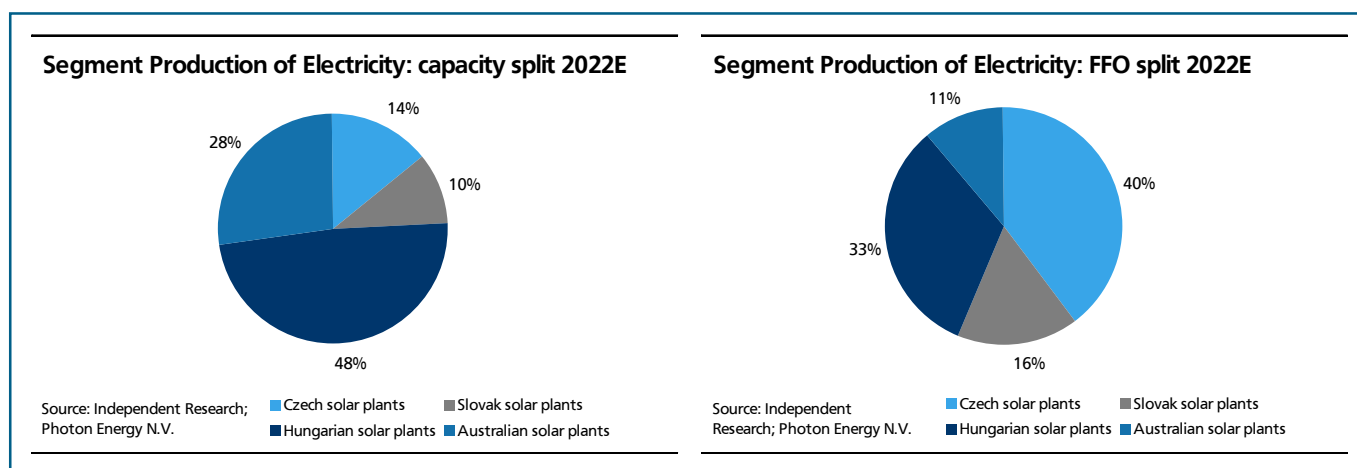
That means, at maturity of the bond 2017/22 Photon Energy has significant assets on the balance sheet with high FFO generating solar plants (book value of property, plant and equipment at the end of 2022E of EUR120.9m vs. net debt of EUR68.1m). If necessary, Photon Energy could leverage again in particular the Czech solar portfolio or sell assets to redeem the bond 2017/22.

**Alternative scenario without expansion of IPP portfolio**

Ability to redeem "smaller" bond even without expansion of IPP portfolio

In case the IBO proceeds only allow the refinancing of the bond 2013/18 Photon Energy could not be able to realise its growth projects in Hungary and Australia. The stable cash flows from the Czech and Slovak IPP portfolios should enable the company to redeem the smaller bond:

- group FFO of EUR4.5m to EUR5.3m p.a. from 2018E to 2022E (falling interest payments)
- combined FFO of Czech and Slovak IPP portfolios of EUR7.5m (2018E) to EUR8.3m (2022E) resulting in the repayment of all bank debt in 2024E
- considerable asset value and possible proceeds from leveraging the IPP portfolios in 2022E



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## Company overview

## Company history

Milestones	
2008	<ul style="list-style-type: none"> <li>Foundation of Photon Energy Group by Georg Hotar and Michael Gartner</li> </ul>
2009 to 2011	<ul style="list-style-type: none"> <li>Construction of several solar plants in the Czech Republic, Slovakia and Germany</li> <li>Foundation of the O&amp;M segment with a portfolio of almost 20 MWp</li> <li>First development projects in Australia in 2011</li> </ul>
2012	<ul style="list-style-type: none"> <li>O&amp;M business grows to more than 50 MWp</li> </ul>
2013	<ul style="list-style-type: none"> <li>Placement of bond 2013/18 (DE000A1HELE2) with a volume of &gt; EUR10m at Frankfurt Stock Exchange</li> <li>Listing of Photon Energy shares (NL0010391108) in the NewConnect segment of Warsaw Stock Exchange</li> <li>Capital increase of EUR24.0m subscribed by major shareholder Solar Age Investments (restructuring)</li> </ul>
2014	<ul style="list-style-type: none"> <li>O&amp;M business expands into Belgium and Bulgaria</li> <li>Simplification of group structure: entity for the operation of proprietary solar plants Photon Energy Investments is merged with the parent company</li> </ul>
2015	<ul style="list-style-type: none"> <li>Following the cuts of feed-in tariffs Photon Energy sells its solar plants and O&amp;M activities in Italy</li> <li>In line with the concentration on the CEE market also sale of the solar plants and O&amp;M business in Germany</li> <li>Expansion of O&amp;M business to over 140 MWp; major O&amp;M contract in Czech Republic with 13.5 MWp</li> <li>Regional expansion of O&amp;M business into Romania</li> </ul>
2016	<ul style="list-style-type: none"> <li>Cooperation agreement with Satcom inverter producer China Electronics GreatWall Energy</li> <li>Major O&amp;M contract for 28.5 MWp in the Czech Republic; Photon Energy largest O&amp;M contractor in the Czech Republic with over 100 MWp and a total O&amp;M portfolio of nearly 200 MWp in nine countries</li> <li>Listing of Photon Energy shares at the Prague Stock Exchange</li> <li>Placement of bond 2016/23 in the Czech Republic</li> </ul>
2017	<ul style="list-style-type: none"> <li>Photon Energy expands into Hungary; first solar plant with capacity of 0.5 MWp acquired</li> <li>Photon Energy developed a large-scale solar pipeline consisting of 9 power plants with a total capacity of 1.4 GWp in Australia.</li> <li>Planned issuance of bond with a volume of EUR30m</li> </ul>

Source: Photon Energy N.V.

## Management




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### *Co-founder and CEO*

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#### **Georg Hotar (CEO and member of the Board of Directors)**

- Co-founder of Photon Energy Group in 2008; still holds a 31.3% stake in the company
- CEO of the issuer; in addition, manager of many companies and subsidiaries within the Photon Energy Group
- 2008 to 2011: CFO of Photon Energy Group
- 2000: founded Central European Capital, a finance and strategy consulting company with a focus on Central and Eastern Europe
- Sound knowledge of international finance in London (Carnegie AB, ICE Securities) and Zurich (Fincoord)
- BSc in Accounting and Finance from the London School of Economics and Master in Finance from the London Business School

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### *Co-founder and manager of Australian business*

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#### **Michael Gartner (member of the Board of Directors)**

- Co-founder of Photon Energy Group in 2008; still holds a 33.4% stake in the company
- Since 2011: Managing Director of the Australian business of Photon Energy Group
- 2008 to 2011: Board member of the issuer and manager of several subsidiaries
- 2005 to 2007: own investment business that focused on the organisation, financing and technology of one of the first large-scale PV installations in the Czech Republic
- 1994 to 2004: equity/debt analyst and head of bond trading department at ING and Commerzbank in Prague
- MBA from the US Business School in Prague and BSc in Economics from the University of Newcastle in Australia

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### *CFO with long-term experience in finance as well as accounting*

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#### **Clemens Wohlmuth (member of the management team)**

- Since 2012: CFO of Photon Energy Group
- 2008 to 2012: Management Consultant at his own company Wohlmuth Consulting
- 2000 to 2008: first of all CFO of Telekom Austria Czech Republic and promotion to COO in 2005 and CEO in 2006
- 2000: Strategic Project Manager reporting to the CFO of Telekom Austria AG
- 1994 to 2000: Senior Manager at Ernst & Young Consulting in Austria; head of reorganisation projects in the industry and energy sectors in Central Europe
- Master degree in Business Administration from the University of Economics in Vienna

## Company data and shareholder structure

*Most important locations:  
Prague and Australia*

Photon Energy is a holding company registered in the Netherlands with the headquarters located in Amsterdam. The most important offices are located in Prague/Czech Republic (responsible for the activities in Middle and Central Europe) and Sydney/Australia.

### Company headquarters

Barbara Strozziilaan 201  
 Amsterdam 1083 HN; The Netherlands  
 Internet: [www.photonenergy.com](http://www.photonenergy.com)

### Investor Relations

Telephone: +420 277 002 921  
 Fax: +420 277 002 911  
 Email: [ir@photonenergy.com](mailto:ir@photonenergy.com)

### Shareholder structure

*Management board members hold majority of shares*

The majority of Photon Energy is owned by its founders Georg Hotar (CEO) and Michael Gartner (Member of the Board of Directors). Via their investment vehicles Mr. Gartner controls 33.4% of the shares (39.3% of the voting rights) and Mr. Hotar 31.3% of the shares (36.8% of the voting rights).

#### Photon Energy N.V.

##### Shareholder structure

Shareholder	Number of shares	Share	Voting rights	Share
Solar Age Investments (CEO Hotar and Board member Gartner)	26,467,000	44.1%	26,467,000	51.9%
Solar Future Cooperatief (Board member Gartner)	8,590,683	14.3%	8,590,683	16.9%
Solar Power to the People Cooperatief (CEO Hotar)	8,051,874	13.4%	8,051,874	15.8%
Photon Energy (treasury shares)	9,043,068	15.1%	0	0.0%
Free float	7,847,375	13.1%	7,847,375	15.4%
<b>Total</b>	<b>60,000,000</b>	<b>100.0%</b>	<b>50,956,932</b>	<b>100.0%</b>

Source: Photon Energy N.V.

#### Photon Energy N.V.

##### Development of issued share capital

Date	Investor	Number of shares (m)			Price EUR/share	Proceeds EURm
		Beginning	Issued	End		
Dec. 2012	Solar Future Cooperatief and Solar Power to the People Cooperatief	4.600	18.400	23.000	0.01	0.2
June 2013	Solar Age Investments (further measure within the restructuring process)	23.000	27.000	50.000	0.89	24.0
Nov. 2013	Solar Age Investments; transferred to Photon Energy (treasury shares)	50.000	10.000	60.000	0.01	0.1

Source: Photon Energy N.V.

## Business model and strategic perspectives

*Covering the lifecycle of solar plants*

### Proprietary solar plant operations and O&M as main pillars

Photon Energy, present in ten countries with about 70 employees, covers the whole lifecycle of solar plants by operating an proprietary IPP portfolio and offering comprehensive solutions and maintenance services to the PV industry. The main focus - from a vertically integrated business model point of view and with respect to FFO contributions - is on the two segments Production of Electricity (proprietary solar plants) and O&M (for proprietary and third party solar plants). To a limited extent, Photon Energy plans and develops solar plants (up to now EPC projects with about 50 MWp realised) and trades with PV components such as modules, inverters or cable.

#### Photon Energy N.V.

##### Business model

Energy Solutions (ES)	Production of Electricity (PE)	Operations & Maintenance (O&M)
<ul style="list-style-type: none"> <li>Project development for rooftop and green field installations from 300 kWp to 300 MWp</li> <li>Design and construction of on-grid and off-grid installations, including battery storage solutions</li> <li>Trading of PV components (modules, inverters, cable and others)</li> </ul>	<ul style="list-style-type: none"> <li>11 proprietary solar plants in the Czech Republic (15.0 MWp), 11 in Slovakia (10.5 MWp) and 1 in Australia (0.1 MWp)</li> </ul>	<ul style="list-style-type: none"> <li>Operations and maintenance (&gt; 200 MWp) of solar plants, including own control room and monitoring platform</li> <li>Full operations and maintenance services in the Czech Republic, Slovakia, Romania and Australia (&gt; 140 MWp, incl. 26 MWp proprietary solar plants)</li> <li>Specialised technical services for PV inverters in other European countries (&gt; 60 MWp)</li> <li>Maintenance for Satcon inverters (only limited competition)</li> </ul>

Source: Photon Energy N.V.

*Stable cash flows from the Czech and Slovak portfolios*

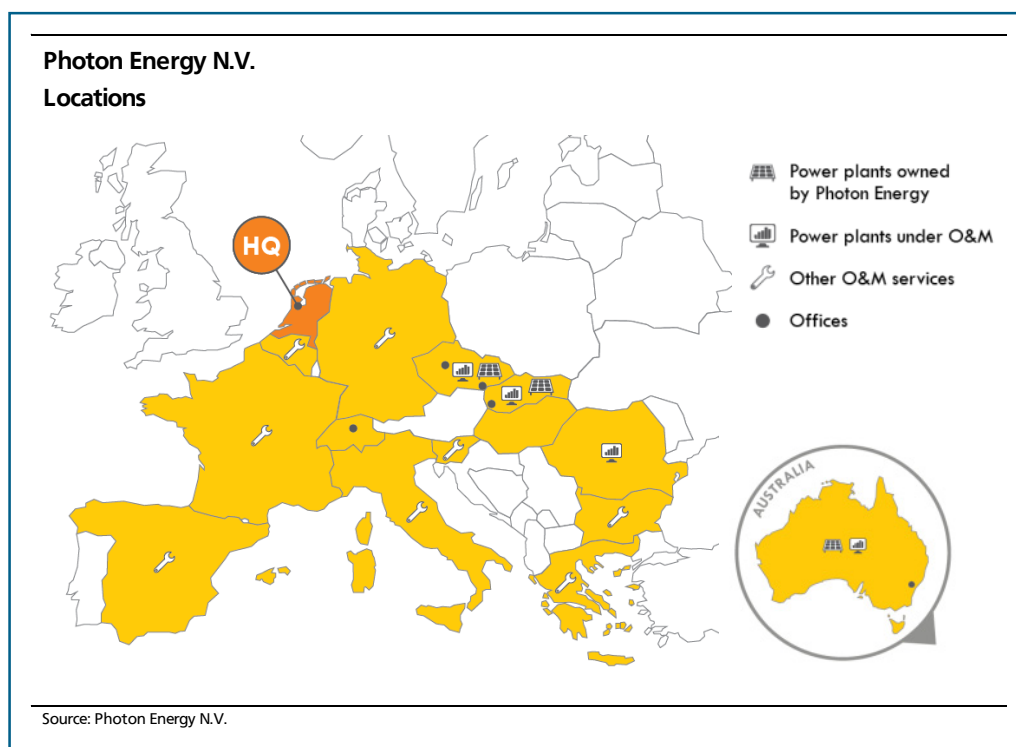
### Czech and Slovak IPP portfolio with guaranteed feed-in tariffs until 2030E and 2025E/26E

The current proprietary solar plants have a capacity of 25.6 MWp located the Czech Republic (15.0 MWp), Slovakia (10.5 MWp of which 2.8 MWp are operated within a 50/50 joint venture and recognised at-equity) and Australia (0.1 MWp). The IPP portfolio has been the most important pillar delivering the highest and even growing FFO (2016: adjusted EUR5.9m (2013: 3.7); total group: EUR2.9m (2013: 0.3)). We expect continuously growing FFO contributions from the existing portfolio thanks to falling interest payments and guaranteed high feed-in tariffs until 2030E for the Czech portfolio (about euro cent 53/kWh) and until 2025E/26E for the Slovak portfolio (euro cent 42.51/kWh). Photon Energy follows a ring fencing approach and has set-up SPVs for each solar plant with a separate bank financing (leasing contracts with Raiffeisen for the Czech portfolio with call option; bank loans with UniCredit for the Slovak portfolio and the solar plants as collateral).

### O&M reaches critical size and profitability

*O&M contracts for solar plants with > 200 MWp*

In recent years, Photon Energy has won major third party contracts for its O&M business (e.g. from WIS Energo in 2015 (13.5 MWp) and from Energy 21 in 2016 (28.5 MWp)) and manages now solar plants with a capacity of over 200 (end of 2012: 59.9) MWp:



- Czech Republic: market leader with 115.8 (of which proprietary solar plants: 15.0) MWp
- Slovakia: 21.4 (of which proprietary solar plants: 10.5) MWp
- Mainly O&M for Satcon inverters in France (21.3 MWp), Italy (15.0 MWp), Romania (11.0 MWp), Belgium (9.2 MWp) and other Western European markets

*Market leader in the Czech Republic*

While full O&M services are concentrated in the Czech Republic, Slovakia and Romania (in future also in Hungary), only central Satcon inverter maintenance services are offered in other European

**Photon Energy N.V. Project pipeline (status as of August 31, 2017)**

Location	Capacity (MWp)	Type	Business model	Land	Grid connection	Construction permit	Ready to build
<b>Hungary</b>							
Pest	6.3	Proprietary portfolio	Licensed PPA	Secured	Secured	In progress	Q4 2017*
Fertöd	0.5	Proprietary portfolio	Licensed PPA	Secured	Secured	Secured	Q2 2017
<b>Total Hungary</b>	<b>6.8</b>						
<b>Australia</b>							
Leeton	28.6	Proprietary portfolio	Market + certificates	Secured	Applied	Applied	Q4 2017*
Environa	19.0	Proprietary portfolio	Market + certificates	Secured	Applied	Applied	Q1 2018*
Gunning	316.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q1 2019*
Gunnedah	165.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q3 2018*
Suntop	286.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q2 2019*
Carrick	166.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q2 2019*
Brewongle	146.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q2 2019*
Mumbil	178.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q2 2019*
Maryvale	130.0	Developer	PPA/market + certificates	Secured	Applied	Applied	Q2 2019*
<b>Total Australia</b>	<b>1,434.6</b>						
<b>Total Hungary and Australia</b>	<b>1,441.4</b>						

Source: Photon Energy N.V. \* planned

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<b>Photon Energy N.V.</b>		
<b>Planned projects for the proprietary IPP portfolio in Hungary and Australia (selection)</b>		
	<b>Fertöd (Hungary)</b>	<b>Leeton (Australia)</b>
Planned capacity (MWp)	0.5	28.6
Power output (kWh/kWp)*	1,200	1,641
Annual production (GWh)	0.6	46.9
Area size (ha)	approx. 1	37.2
Households supplied	68	7,179
CO <sub>2</sub> saved (t, annually)	615	47,744
Total investments (EURm)	0.7	23.1
Expected IRR	-	8.1%
Construction start (planned)	Q3 2017	Q4 2017
Finanl commissioning (planned)	Q4 2017	Q1 2018
Status (July 31, 2017)	Project acquired ready-to-build Selection of sub-contractors under way	Land purchase approved by local council Several application processes in place Grid capacity study under way

Source: Photon Energy N.V. \* Comparison: average in Central Europe approx. 975 kWh/kWp

### O&M portfolio expected to continue to grow

markets (in 2016 partnership agreement with China Electronics GreatWall Energy, the successor of the original Satcon inverter producer). Due to the increased O&M contract base Photon Energy has achieved profitability in its O&M segment in H1 2017 (EBITDA: EUR+0.3m (-0.3); profitable in the Czech Republic and break-even in Slovakia). The turnaround is partially supported by high transfer prices from the proprietary IPP portfolio. O&M remains a competitive, personnel-intensive business. However, Photon Energy has reached a critical size that should grow with the expansion of its proprietary IPP portfolio and additional third party contracts.

### IPP portfolio: +78.6 MWp

#### **Hungary as most important growth market for proprietary IPP portfolio**

With the IBO proceeds (EUR30.0m of which EUR18.3m are available for growth projects) Photon Energy aims to build up new solar capacities of 78.6 MWp:

- Hungary: 50.0 MWp (first project started)
- Australia: Leeton project with 28.6 MWp (New South Wales)

### Hungary with attractive feed-in tariffs

From our point of view, the IPP projects in Hungary are the most important ones with the highest probability of success. This is due to several reasons:

- Window of opportunity with now profitable feed-in tariffs (euro cent 10.33/kWh) due to falling module prices (KÁS schemes relevant for projects of Photon Energy)
- Due to regulatory reasons a large number of small projects are planned (0.5 MWp each plant grouped in entities of 5 to 10 MWp) and available to be bought by Photon Energy
- Small project sizes lead to risk diversification and accelerated growth (faster construction and therefore refinancing of small solar plants free up equity for other projects)
- Due to its EPC model Photon Energy can reduce long-term equity ratio to 5% to 15% (usually: 20% to 30%); good relations to Raiffeisen and UniCredit also operating in Hungary
- Cost-efficient O&M due to neighbourhood to Slovakia (only some new staff necessary)

### Project pipeline of 20 MWp

Currently, Photon Energy is constructing the first Hungarian solar plant in Fertöd near Győr (capacity: 0.5 MWp; commissioning: Q4 2017E). The project pipeline in Hungary already covers 20.0 MWp (own project applications: 5.5 MWp; projects planned by third parties and potentially be acquired: 14.5 MWp). Therefore, we think the target of 50.0 MWp is realistic.



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**Most advanced project in Leeton (New South Wales)**


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**Attractive power output - low revenue per kWh**


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**Development of projects until sale to co-developer**


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**Probability of success hard to quantify - not included in our forecasts**


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**Australia with larger projects and higher power output but also lower revenue per kWh**

Since its market entry in 2011, Photon Energy has built up a large network in Australia, among others by constructing several rooftop solar plants. The Leeton project (capacity: 28.6 MWp) is the priority. It is the most advanced project (land purchase approved by local council; connection to the power grid secured; application for construction permit submitted; commissioning in Q1 2018E) and will become part of Photon Energy's proprietary IPP portfolio (capex: EUR23.1m with equity of EUR6.9m; expected FFO: EUR1.6m). For the Environa project (capacity: 19.0 MWp; maybe taken over in the proprietary IPP portfolio) a study to secure the connection to the power grid is currently running. Accordingly, it is not included in our forecasts. On the one hand, the Australian solar market is attractive due to the strong commitment of the government to promote renewable energies and the high power output (about 1,700 (Czech Republic: 1,200) kWh/kWp). On the other hand, the market is competitive, project risks (larger capacities) and equity requirements (25% to 30%) are high and revenue per kWh is low. At the time of refinancing solar plants, banks demand Photon Energy to close long-term power purchase agreements (PPA) at about AUD cent 7.00/kWh (euro cent 4.69) - compared to the spot price of AUD cent 16.31/kWh (euro cent 10.93; market price for electricity plus Large-scale Generation Certificates (LGCs)). This weakens the advantage of high power output. So, Photon Energy would have to build a large Australian IPP portfolio (at a higher capex) to achieve FFOs comparable to Hungary.

**Co-development projects could offer upside potential**

In 2016, Photon Energy has started the development of several large solar plant projects in Australia - in particular the most advanced ones Gunning (316 MWp) and Gunnedah (165 MWp). Except Gunning, all projects are 51/49 joint ventures with a local wind farm developer and advised by Pottinger. Photon Energy will not finance or construct the solar plants. Given a total capacity of 1,387 MWp and assuming a capex of EUR0.8m/MWp with required equity of 30% the capex of EUR1,110m and equity share of EUR333m would overburden the capacities of Photon Energy. Instead, Photon Energy develops the projects until they are ready for construction. At that point a significant stake of the SPVs is sold to co-developers. A sale of stakes in the SPVs might lead to significant cash inflows. Nevertheless, this project business is highly volatile and the probability of success is hard to quantify. Therefore, we did not consider these activities in our forecasts.

**Photon Energy N.V.**
**Co-development project pipeline in Australia (status as of August 31, 2017)**

Location	Capacity (MWp)	Power output (kWh/kWp)*	GWh p.a.	Revenue year 1** (AUDm)	Capex*** (AUDm)	Status	Feasibility Site acquisition Grid capacity	Share of ownership (%)	Financial close (planned)	Commissioning (planned)
Gunning	316	1,706	539.1	36.7	396.6	SEARS issued	✓	100%	Q2 2018	Q1 2019
Gunnedah	165	1,795	278.2	18.9	228.1	SEARS issued	✓	51%	Q2 2018	Q3 2018
Suntop	286	1,791	512.2	34.8	372.6	PEA in progress	✓	51%	Q2 2018	Q2 2019
Carrick	166	1,610	301.4	20.5	216.3	PEA in progress	✓	51%	Q2 2018	Q2 2019
Brewongle	146	1,674	243.7	16.6	190.2	PEA in progress	✓	51%	Q2 2018	Q2 2019
Mumbil	178	1,782	317.4	21.6	231.9	PEA submitted	✓	51%	Q3 2018	Q2 2019
Maryvale	130	1,790	232.7	15.8	169.4	PEA submitted	✓	51%	Q3 2018	Q2 2019
<b>Total</b>	<b>1,387</b>	<b>1,737</b>	<b>2,424.7</b>	<b>164.9</b>	<b>1,805.1</b>	-	-	-	-	-

Source: Photon Energy N.V.

\* Source: PVSYST; \*\* Revenue year one based on AUD cent 6.80/kWh;

\*\*\* Forecast capex as at August 2017, excludes grid connection costs and landcosts

## Market and competition

*Hungary and Australia still with catch-up potential*

### Hungarian KÁT scheme enables attractive investments for the next two to three years

Up to now, renewable energies still play a limited role in the Photon Energy target markets. We think this offers considerable growth potential in particular in Hungary. With respect to electricity production, in 2015 Hungarian renewable energies and particularly solar power had only a small share of gross energy consumption of 11% (Czech Republic: 13%; Slovakia: 24%; Australia: 14%; Germany: 30%) and 0.4% (Czech Republic: 2.7%; Slovakia: 1.9%; Australia: 2.4%; Germany: 6.0%). However, in line with the EU objectives, Hungary wants to cover 14.65% (obligatory level: 13.0%; 2014: 9.6%) of gross energy consumption with renewable energies by 2020E. Against this background the government has introduced the new METÁR scheme

Photon Energy N.V.												
Overview of renewable energy production in target markets												
	Technology	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	CAGR
<b>Czech Republic</b>												
Electricity capacity (MW)	Hydropower	2,171	2,176	2,184	2,196	2,197	2,212	2,252	2,252	2,260	2,259	0.4%
	Wind	114	150	193	213	213	258	262	278	281	281	10.5%
	Solar	4	40	465	1,727	1,913	2,022	2,064	2,068	2,075	2,073	>100%
	Bioenergy	228	286	352	415	509	657	694	766	775	776	14.6%
	Others	0	0	0	0	0	0	0	0	0	0	-
	<b>Total RE</b>		<b>2,517</b>	<b>2,652</b>	<b>3,194</b>	<b>4,551</b>	<b>4,832</b>	<b>5,149</b>	<b>5,272</b>	<b>5,364</b>	<b>5,391</b>	<b>5,389</b>
Share in electricity production (%)	Solar	0.0%	0.0%	0.1%	0.7%	2.5%	2.5%	2.3%	2.5%	2.7%	-	-
	<b>Total RE</b>	<b>4.4%</b>	<b>4.9%</b>	<b>6.3%</b>	<b>7.6%</b>	<b>9.1%</b>	<b>10.0%</b>	<b>11.7%</b>	<b>11.9%</b>	<b>12.8%</b>	-	-
<b>Slovakia</b>												
Electricity capacity (MW)	Hydropower	2,515	2,548	2,487	2,516	2,523	2,522	2,523	2,523	2,522	2,536	0.1%
	Wind	5	5	3	3	3	3	5	3	4	4	-2.4%
	Solar	0	0	0	19	496	513	533	533	533	540	-
	Bioenergy	140	154	168	181	195	213	214	238	243	255	6.9%
	Others	0	0	0	0	0	0	0	0	0	0	-
	<b>Total RE</b>		<b>2,660</b>	<b>2,707</b>	<b>2,658</b>	<b>2,719</b>	<b>3,217</b>	<b>3,251</b>	<b>3,275</b>	<b>3,297</b>	<b>3,302</b>	<b>3,335</b>
Share in electricity production (%)	Solar	0.0%	0.0%	0.0%	0.1%	1.4%	1.5%	2.1%	2.2%	1.9%	-	-
	<b>Total RE</b>	<b>18.3%</b>	<b>16.3%</b>	<b>19.7%</b>	<b>22.9%</b>	<b>19.1%</b>	<b>20.5%</b>	<b>23.3%</b>	<b>23.7%</b>	<b>23.2%</b>	-	-
<b>Hungary</b>												
Electricity capacity (MW)	Hydropower	49	51	53	53	55	56	57	57	57	57	1.7%
	Wind	61	134	203	293	331	325	329	329	329	329	20.6%
	Solar	0	1	1	2	4	12	35	77	168	225	>100%
	Bioenergy	346	396	509	514	500	273	331	552	525	567	5.6%
	Others	0	0	0	0	0	0	0	0	0	0	-
	<b>Total RE</b>		<b>456</b>	<b>582</b>	<b>766</b>	<b>862</b>	<b>890</b>	<b>666</b>	<b>752</b>	<b>1,015</b>	<b>1,079</b>	<b>1,178</b>
Share in electricity production (%)	Solar	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.4%	-	-
	<b>Total RE</b>	<b>4.7%</b>	<b>5.9%</b>	<b>8.1%</b>	<b>8.1%</b>	<b>7.5%</b>	<b>7.6%</b>	<b>9.2%</b>	<b>10.7%</b>	<b>10.6%</b>	-	-
<b>Australia</b>												
Electricity capacity (MW)	Hydropower	9,243	9,230	9,295	9,449	9,464	9,466	8,713	8,724	8,724	8,724	-0.6%
	Wind	1,249	1,441	1,703	1,864	2,127	2,561	3,221	3,797	4,234	4,327	14.8%
	Solar	73	85	108	402	1,397	2,435	3,258	4,007	4,360	5,208	60.7%
	Bioenergy	840	785	822	825	826	827	817	824	826	826	-0.2%
	Others	1	1	1	1	1	1	1	1	1	-	-
	<b>Total RE</b>		<b>11,406</b>	<b>11,542</b>	<b>11,929</b>	<b>12,541</b>	<b>13,815</b>	<b>15,290</b>	<b>16,010</b>	<b>17,353</b>	<b>18,145</b>	<b>19,085</b>
Share in electricity production (%)	Solar	0.0%	0.1%	0.1%	0.2%	0.6%	1.0%	1.5%	2.0%	2.4%	-	-
	<b>Total RE</b>	<b>8.7%</b>	<b>8.1%</b>	<b>7.5%</b>	<b>8.7%</b>	<b>10.3%</b>	<b>10.6%</b>	<b>13.3%</b>	<b>15.0%</b>	<b>13.6%</b>	-	-
<b>Germany</b>												
Share in electricity production (%)	Solar	0.5%	0.7%	1.1%	1.9%	3.2%	4.2%	4.9%	5.8%	6.0%	-	-
	<b>Total RE</b>	<b>14.7%</b>	<b>15.4%</b>	<b>16.6%</b>	<b>17.4%</b>	<b>21.1%</b>	<b>23.7%</b>	<b>24.7%</b>	<b>26.8%</b>	<b>29.8%</b>	-	-

Source: International Renewable Energy Agency; BP

RE = renewable energies

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**Photon Energy N.V.****Hungary: Feed-in tariffs for renewable energies and waste**

	0.05 MW to 0.5 MW except wind power	0.5 MW to 1.0 MW except wind power	> 1.0 MW and wind power
Compensation scheme	KÁT: applications until 31/12/16 METÁR: applications from 01/01/17	METÁR	METÁR
Compensation system	Fixed feed-in tariff	Market price + premium (Green Premium I) Premium set by government	Tendering procedure (Green Premium II)
Compensation solar 2017	Fixed tariff: HUF31.77/kWh Fixed tariff: euro cent 10.33/kWh	Premium I: HUF31.77/kWh Premium I: euro cent 10.33/kWh	n/a n/a
Degression	Increase in line with the consumer price index less 1% degression each year	Increase in line with the consumer price index less 1% degression each year	n/a
Eligibility period	KÁT: max. 25 years or until predefined electricity production is reached METÁR: max. 13 years and 1 month with annual production of 1,110 to 1,500 kWh/kWp	Max. 12 years and 7 months with annual production of 1,100 to 1,500 kWh/kWp	n/a
Sale of electricity	Transmission system operator MAVIR is required to buy electricity and to sell it at the electricity exchange HUPX	Plant operators required to sell electricity at electricity exchange HUPX	Plant operators required to sell electricity at electricity exchange HUPX
Balancing of power grid	Required by MAVIR	Required by plant operators	Required by plant operators
Comments	Plant operators can also decide to join the Green Premium I compensation Plant to be commissioned maximum 2 years after eligibility has been confirmed	Plant to be commissioned max. 2 years after eligibility has been confirmed Available budget 2017 to 2021: EUR32.5m	Eligible if solar plants have an efficiency of 15% (crystalline cells) and 7% (thin-film cells)

Source: RES Legal; Ministry of National Development

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**Construction of 0.5 MWp solar plants under old KÁT scheme**


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**Large number of potential acquisition targets**


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(Megújuló Támogatási Rendszer or Renewable Support Scheme) on January 1, 2017 - a modification of the previous KÁT scheme (Kötelező Átvételi rendszer or Obligatory Off-take). Since solar module prices continue to fall and feed-in tariffs have dropped significantly in other European markets the Hungarian compensation scheme for renewable energies has become attractive. We think, for Photon Energy there is now a window of opportunity of two to three years to build an IPP portfolio of multitude 0.5 MWp solar plants still compensated according to the KÁT scheme (i.e. application for construction submitted until December 31, 2016):

- High feed-in tariff of euro cent 10.33/kWh (tender in Germany in June 2017: on average euro cent 5.66/kWh) with power output 15% to 20% above level in Western Europe
- Feed-in tariffs guaranteed for up to 25 (METÁR scheme: about 13) years
- Transmission system operator MAVIR buys the electricity and manages the power grid

The government has already extended the construction period for solar plants running under the KÁT scheme to three (before: two) years. Thus, Photon Energy could build its Hungarian IPP portfolio until the end of 2019E. There are also discussions about the extension of the feed-in period to 18 (currently: 13) years under the new METÁR scheme. This would offer Photon Energy additional growth potential in the next years. The Hungarian Energy and Public Utility Regulatory Authority (MEKPH) estimates that solar plant capacities could reach 2,100 (end of 2016: 225) MWp at the end of 2018E. According to Photon Energy, about 2,500 construction applications for solar plants with a capacity of 1.5 GWp were submitted under the KÁT scheme until the end of 2016. Since not all applicants will be willing or able to actually realise their solar plant constructions we think Photon Energy should have the opportunity to acquire attractive projects.

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*Share of renewable energies production 2020E: 23.5% (2017E: 14.2%)*

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*Market-based pricing of green certificates*

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*Renewable energy plants with 8,570 GWh still need to be constructed*

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*PPA contract prices as relevant figure*

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### Australian electricity production from renewables with potential of +54% until 2020E

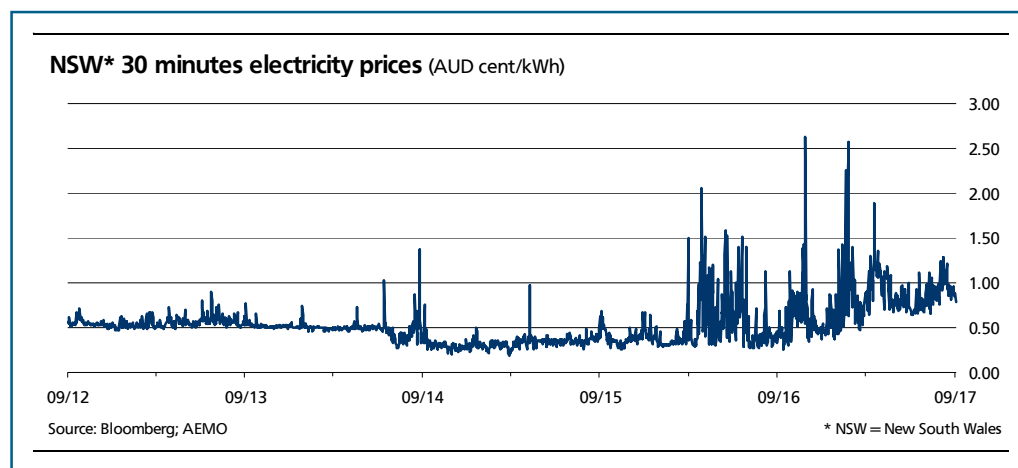
The Australian government has taken several steps to promote renewable energies. Until 2020E, Australia wants to generate 23.5% (2017E: 14.2%) of its electricity with renewable energies. The objectives and regulations for renewable energies are set out in the Renewable Energy Target (RET). The compensation is based on two types of green certificates (1 certificate = 1 MWh):

- Small-scale Technology Certificates (STCs) for power plants of up to 100 kWp
- Large-scale Generation Certificates (LGCs) for power plants of > 100 kWp

The revenue for producers of renewable energies is the sum of the market prices for electricity and green certificates. The certificates are created by the Clean Energy Regulator (REC) depending on the amount of eligible renewable electricity produced. The LGCs - the relevant certificates for Photon Energy - are traded using the electronic clearing house of the Australian government or OTC directly between certificate owners and users. Prices are determined by supply and demand. While LGCs are granted to renewable energies producers for free liable entities such as wholesale electricity retailers are required to buy LGCs and surrender them to the REC.

In 2015, the Australian government decided that the number of LGCs should reach 33,000 GWh above the 1997 level by 2020E. However, data of the REC show that the total number of LGCs stood at 18,300 GWh at the end of 2016 and at 21,497 GWh as of August 1, 2017 (2018E: 23,000 GWh). This compares to a LGCs demand of 21,431 GWh in 2016 and of 26,031 GWh in 2017E. The project pipeline of Photon Energy is quite large in Australia (total capacity: 1,387 GWp equivalent to 2,216 GWh). Therefore, we think that despite the still large number of "free" LGCs Photon Energy has to quickly realise the projects to obtain LGCs for all projects.

On the spot market, electricity from renewable energies is currently traded at AUD cent 16.31/kWh or euro cent 10.93/kWh (AUD cent 8.45/kWh for LGCs + AUD cent 7.86/kWh for electricity in New South Wales). At first view, this is an attractive level in particular given the high power output of about 1,700 kWh/kWp in Australia. At second view, producers of renewable energies nearly never realise these spot prices since they are no reliable basis for long-term investment planning. Therefore, electricity producers often enter into long-term forward contracts for electricity and LGCs or agree on long-term PPA contracts with utilities. According to Photon Energy, current PPA contract prices are traded at only AUD cent 7.00/kWh (euro cent 4.69). These low prices reduce the attractiveness of the Australian market.



## Photon Energy N.V.

## Income statement

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>Revenue</b>	<b>13.9</b>	<b>11.8</b>	<b>13.3</b>	<b>13.1</b>	<b>14.8</b>	<b>17.4</b>	<b>22.3</b>	<b>24.7</b>	<b>25.2</b>	<b>25.7</b>
Cost of sales	-2.6	-0.7	-2.4	-1.6	-1.5	-1.3	-1.5	-1.8	-1.9	-2.0
Energy tax	-1.9	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.9	-0.9	-0.9
<b>Gross profit</b>	<b>9.3</b>	<b>10.4</b>	<b>10.1</b>	<b>10.7</b>	<b>12.5</b>	<b>15.2</b>	<b>19.9</b>	<b>22.1</b>	<b>22.5</b>	<b>22.9</b>
Other income	0.0	0.0	0.0	0.4	0.1	0.2	0.3	0.3	0.3	0.3
Personnel expenses	-3.3	-2.8	-2.1	-2.2	-2.6	-3.1	-3.6	-3.7	-3.8	-3.8
Administrative expenses	-2.4	-2.9	-1.6	-1.7	-1.8	-2.2	-2.6	-2.6	-2.7	-2.7
Other expenses	-0.4	-1.1	-0.2	-0.6	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6
<b>EBITDA</b>	<b>3.3</b>	<b>3.5</b>	<b>6.1</b>	<b>6.6</b>	<b>7.7</b>	<b>9.6</b>	<b>13.4</b>	<b>15.5</b>	<b>15.8</b>	<b>16.1</b>
Depreciation and amortisation	-4.8	-4.4	-5.0	-5.3	-5.3	-6.6	-8.5	-9.0	-9.0	-9.0
<b>EBIT</b>	<b>-1.5</b>	<b>-0.9</b>	<b>1.1</b>	<b>1.3</b>	<b>2.5</b>	<b>3.0</b>	<b>4.9</b>	<b>6.4</b>	<b>6.8</b>	<b>7.0</b>
Financial result	-3.7	-5.2	-2.0	-3.3	-2.4	-4.3	-4.8	-4.7	-4.5	-3.9
<b>EBT</b>	<b>-5.2</b>	<b>-6.1</b>	<b>-0.9</b>	<b>-2.0</b>	<b>0.1</b>	<b>-1.3</b>	<b>0.1</b>	<b>1.7</b>	<b>2.3</b>	<b>3.1</b>
Income tax	-0.3	0.0	-0.6	-0.7	-0.2	-0.1	-0.3	-0.6	-0.6	-0.8
Income from discontinued operations	0.5	1.1	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income before minority interests</b>	<b>-5.0</b>	<b>-5.0</b>	<b>-1.7</b>	<b>-2.7</b>	<b>-0.2</b>	<b>-1.4</b>	<b>-0.3</b>	<b>1.1</b>	<b>1.6</b>	<b>2.4</b>
Non-controlling interest	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income</b>	<b>-5.0</b>	<b>-5.0</b>	<b>-1.7</b>	<b>-2.7</b>	<b>-0.2</b>	<b>-1.4</b>	<b>-0.3</b>	<b>1.1</b>	<b>1.6</b>	<b>2.4</b>
Weighted average number of shares outstanding - basic (m)	37.707	50.000	50.067	50.982	50.968	50.957	50.957	50.957	50.957	50.957
Weighted average number of shares outstanding - diluted (m)	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000	60.000
Basic EPS (EUR)	-0.13	-0.10	-0.03	-0.05	0.00	-0.03	0.00	0.02	0.03	0.05
Diluted EPS (EUR)	-0.08	-0.08	-0.03	-0.04	0.00	-0.02	0.00	0.02	0.03	0.04
DPS (EUR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other comprehensive income	-6.9	6.5	1.0	0.7	0.2	13.1	7.6	0.0	0.0	0.0
<b>Total comprehensive income</b>	<b>-11.9</b>	<b>1.5</b>	<b>-0.8</b>	<b>-2.0</b>	<b>0.0</b>	<b>11.7</b>	<b>7.3</b>	<b>1.1</b>	<b>1.6</b>	<b>2.4</b>
Adjusted EBITDA	3.5	4.5	6.5	6.5	7.6	9.4	13.2	15.2	15.5	15.8
Adjusted EBIT	-1.4	0.1	1.4	1.3	2.4	2.8	4.6	6.1	6.5	6.7
Adjusted EBT	-4.8	-3.0	-1.7	-1.8	-0.7	-1.5	-0.2	1.4	2.0	2.8

Source: Independent Research; Photon Energy N.V.

## Photon Energy N.V.

## Income statement (as percentage of revenue)

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>Revenue</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Cost of sales	-19.1%	-6.1%	-18.3%	-12.1%	-10.4%	-7.6%	-6.9%	-7.3%	-7.4%	-7.6%
Energy tax	-13.8%	-5.8%	-5.6%	-5.9%	-5.6%	-4.8%	-3.8%	-3.5%	-3.5%	-3.5%
<b>Gross profit</b>	<b>67.1%</b>	<b>88.1%</b>	<b>76.1%</b>	<b>81.9%</b>	<b>83.9%</b>	<b>87.6%</b>	<b>89.3%</b>	<b>89.3%</b>	<b>89.1%</b>	<b>88.9%</b>
Other income	0.0%	0.2%	0.0%	2.9%	0.7%	1.0%	1.2%	1.2%	1.2%	1.2%
Personnel expenses	-23.5%	-24.0%	-15.9%	-17.1%	-17.5%	-18.1%	-16.3%	-15.1%	-15.0%	-14.9%
Administrative expenses	-17.1%	-25.0%	-12.3%	-12.9%	-12.3%	-12.7%	-11.5%	-10.6%	-10.5%	-10.5%
Other expenses	-2.6%	-9.6%	-1.8%	-4.7%	-2.6%	-2.7%	-2.4%	-2.2%	-2.2%	-2.2%
<b>EBITDA</b>	<b>23.9%</b>	<b>29.7%</b>	<b>46.1%</b>	<b>50.0%</b>	<b>52.2%</b>	<b>55.1%</b>	<b>60.2%</b>	<b>62.5%</b>	<b>62.5%</b>	<b>62.5%</b>
Depreciation and amortisation	-34.9%	-37.6%	-37.8%	-40.2%	-35.6%	-38.0%	-38.3%	-36.5%	-35.8%	-35.1%
<b>EBIT</b>	<b>-11.0%</b>	<b>-7.9%</b>	<b>8.4%</b>	<b>9.8%</b>	<b>16.6%</b>	<b>17.1%</b>	<b>22.0%</b>	<b>26.0%</b>	<b>26.7%</b>	<b>27.4%</b>
Financial result	-26.7%	-43.9%	-15.2%	-25.1%	-15.9%	-24.8%	-21.6%	-19.1%	-17.7%	-15.1%
<b>EBT</b>	<b>-37.7%</b>	<b>-51.7%</b>	<b>-6.9%</b>	<b>-15.2%</b>	<b>0.6%</b>	<b>-7.7%</b>	<b>0.3%</b>	<b>6.9%</b>	<b>9.0%</b>	<b>12.2%</b>
Income tax	-2.0%	-0.3%	-4.4%	-5.0%	-1.7%	-0.6%	-1.5%	-2.2%	-2.5%	-3.0%
Income from discontinued operations	3.7%	9.2%	-1.6%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Net income before minority interests</b>	<b>-36.0%</b>	<b>-42.8%</b>	<b>-12.9%</b>	<b>-20.3%</b>	<b>-1.0%</b>	<b>-8.3%</b>	<b>-1.1%</b>	<b>4.6%</b>	<b>6.5%</b>	<b>9.3%</b>
Non-controlling interest	-0.1%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Net income</b>	<b>-36.1%</b>	<b>-42.9%</b>	<b>-12.9%</b>	<b>-20.3%</b>	<b>-1.0%</b>	<b>-8.3%</b>	<b>-1.1%</b>	<b>4.6%</b>	<b>6.5%</b>	<b>9.3%</b>
Other comprehensive income	-49.7%	55.3%	7.2%	5.0%	1.1%	75.5%	34.1%	0.0%	0.0%	0.0%
<b>Total comprehensive income</b>	<b>-85.7%</b>	<b>12.5%</b>	<b>-5.7%</b>	<b>-15.3%</b>	<b>0.1%</b>	<b>67.2%</b>	<b>32.9%</b>	<b>4.6%</b>	<b>6.5%</b>	<b>9.3%</b>
Adjusted EBITDA	24.9%	38.2%	48.6%	49.8%	51.5%	54.2%	59.0%	61.3%	61.4%	61.3%
Adjusted EBIT	-10.0%	0.6%	10.9%	9.6%	15.9%	16.1%	20.8%	24.8%	25.6%	26.2%
Adjusted EBT	-34.5%	-25.8%	-12.5%	-13.8%	-4.5%	-8.7%	-0.9%	5.5%	7.8%	11.0%

Source: Independent Research; Photon Energy N.V.

**Photon Energy N.V.****Balance sheet**

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
Intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Property, plant and equipment	78.3	81.5	76.8	74.0	70.1	124.5	147.1	138.4	129.6	120.9
Investments in equity-accounted investees	2.5	2.1	2.2	1.6	1.7	1.7	1.8	1.9	2.0	2.0
Other investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Long-term receivables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other non-current assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Non-current assets</b>	<b>80.8</b>	<b>83.6</b>	<b>79.0</b>	<b>75.6</b>	<b>71.7</b>	<b>126.3</b>	<b>148.9</b>	<b>140.3</b>	<b>131.6</b>	<b>123.0</b>
Inventories	0.4	0.7	0.9	1.1	1.2	1.4	1.8	2.0	2.1	2.1
Trade receivables	0.9	1.2	0.9	1.1	1.3	1.5	2.0	2.2	2.2	2.3
Gross amount due from customers for contract works	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other current assets	3.9	3.2	3.7	3.4	3.3	3.2	3.4	3.3	3.3	3.4
Cash and cash equivalents (plus ST financial assets)	4.7	4.6	5.3	6.0	24.6	15.9	12.9	14.0	15.6	5.0
Assets classified as held for sale	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>current assets</b>	<b>9.8</b>	<b>9.9</b>	<b>10.9</b>	<b>11.6</b>	<b>30.4</b>	<b>22.1</b>	<b>20.1</b>	<b>21.6</b>	<b>23.3</b>	<b>12.8</b>
<b>Balance sheet total</b>	<b>90.7</b>	<b>93.5</b>	<b>90.0</b>	<b>87.1</b>	<b>102.1</b>	<b>148.4</b>	<b>168.9</b>	<b>161.8</b>	<b>154.9</b>	<b>135.7</b>
Share capital	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Share premium	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
Revaluation reserve	22.8	27.7	25.4	24.4	24.6	37.7	45.3	45.3	45.3	45.3
Legal reserve fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hedging reserve	-0.5	-0.6	-0.4	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Translation reserve	-2.4	-1.8	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Retained earnings	-17.8	-21.7	-20.0	-23.3	-24.6	-26.0	-26.2	-25.1	-23.5	-21.1
Treasury shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-controlling interests	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Equity</b>	<b>26.7</b>	<b>28.2</b>	<b>28.5</b>	<b>24.2</b>	<b>23.1</b>	<b>34.7</b>	<b>42.1</b>	<b>43.2</b>	<b>44.8</b>	<b>47.2</b>
Non-current loans and borrowings	42.5	43.1	39.0	37.8	34.3	63.7	73.9	65.4	56.8	48.3
Other non-current financial liabilities	4.6	8.0	8.2	11.4	30.5	30.5	30.5	30.5	0.5	17.5
Other non-current liability from income tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax liabilities	3.4	5.1	5.5	5.8	5.9	8.3	9.5	9.4	9.3	9.1
<b>Non-current liabilities</b>	<b>50.5</b>	<b>56.1</b>	<b>52.7</b>	<b>55.0</b>	<b>70.7</b>	<b>102.4</b>	<b>113.9</b>	<b>105.2</b>	<b>66.6</b>	<b>74.9</b>
Current loans and borrowings	9.1	4.0	3.8	3.9	3.9	6.3	7.3	7.3	7.3	7.3
Other current financial liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
Trade payables	2.1	1.2	1.1	0.6	0.8	1.0	1.2	1.4	1.4	1.4
Other current liabilities	2.2	4.0	3.8	3.4	3.7	4.0	4.5	4.8	4.8	4.9
Liabilities classified as held for sale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Current liabilities</b>	<b>13.4</b>	<b>9.3</b>	<b>8.7</b>	<b>7.9</b>	<b>8.3</b>	<b>11.2</b>	<b>13.0</b>	<b>13.4</b>	<b>43.5</b>	<b>13.5</b>
<b>Balance sheet total</b>	<b>90.7</b>	<b>93.5</b>	<b>90.0</b>	<b>87.1</b>	<b>102.1</b>	<b>148.4</b>	<b>168.9</b>	<b>161.8</b>	<b>154.9</b>	<b>135.7</b>

Source: Independent Research; Photon Energy N.V.



## Photon Energy N.V.

## Balance sheet (as percentage of balance sheet total)

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
Intangible assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Property, plant and equipment	86.4%	87.2%	85.4%	84.9%	68.6%	83.9%	87.0%	85.5%	83.7%	89.1%
Investments in equity-accounted investees	2.8%	2.2%	2.4%	1.8%	1.6%	1.2%	1.1%	1.2%	1.3%	1.5%
Other investments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Long-term receivables	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other non-current assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Deferred tax assets	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Non-current assets</b>	<b>89.2%</b>	<b>89.4%</b>	<b>87.8%</b>	<b>86.7%</b>	<b>70.2%</b>	<b>85.1%</b>	<b>88.1%</b>	<b>86.7%</b>	<b>85.0%</b>	<b>90.6%</b>
Inventories	0.4%	0.7%	1.0%	1.3%	1.2%	1.0%	1.1%	1.3%	1.3%	1.6%
Trade receivables	1.0%	1.2%	1.0%	1.3%	1.3%	1.0%	1.2%	1.3%	1.4%	1.7%
Gross amount due from customers for contract works	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other current assets	4.3%	3.4%	4.1%	3.8%	3.2%	2.2%	2.0%	2.0%	2.2%	2.5%
Cash and cash equivalents (plus ST financial assets)	5.2%	5.0%	5.9%	6.8%	24.1%	10.7%	7.6%	8.7%	10.1%	3.7%
Assets classified as held for sale	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>current assets</b>	<b>10.8%</b>	<b>10.6%</b>	<b>12.2%</b>	<b>13.3%</b>	<b>29.8%</b>	<b>14.9%</b>	<b>11.9%</b>	<b>13.3%</b>	<b>15.0%</b>	<b>9.4%</b>
<b>Balance sheet total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Share capital	0.7%	0.6%	0.7%	0.7%	0.6%	0.4%	0.4%	0.4%	0.4%	0.4%
Share premium	26.2%	25.4%	26.4%	27.3%	23.3%	16.0%	14.1%	14.7%	15.3%	17.5%
Revaluation reserve	25.2%	29.6%	28.3%	28.0%	24.1%	25.4%	26.8%	28.0%	29.2%	33.4%
Legal reserve fund	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hedging reserve	-0.5%	-0.6%	-0.5%	-0.2%	-0.2%	-0.1%	-0.1%	-0.1%	-0.1%	-0.2%
Translation reserve	-2.6%	-1.9%	-1.1%	-1.3%	-1.1%	-0.8%	-0.7%	-0.7%	-0.7%	-0.8%
Retained earnings	-19.6%	-23.2%	-22.2%	-26.7%	-24.0%	-17.5%	-15.5%	-15.5%	-15.1%	-15.5%
Treasury shares	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-controlling interests	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Equity</b>	<b>29.5%</b>	<b>30.1%</b>	<b>31.7%</b>	<b>27.8%</b>	<b>22.6%</b>	<b>23.4%</b>	<b>24.9%</b>	<b>26.7%</b>	<b>29.0%</b>	<b>34.8%</b>
Non-current loans and borrowings	46.9%	46.0%	43.4%	43.4%	33.6%	42.9%	43.7%	40.4%	36.7%	35.6%
Other non-current financial liabilities	5.1%	8.5%	9.1%	13.1%	29.8%	20.5%	18.0%	18.8%	0.3%	12.9%
Other non-current liability from income tax	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Deferred tax liabilities	3.7%	5.4%	6.1%	6.7%	5.8%	5.6%	5.6%	5.8%	6.0%	6.7%
<b>Non-current liabilities</b>	<b>55.7%</b>	<b>60.0%</b>	<b>58.6%</b>	<b>63.2%</b>	<b>69.3%</b>	<b>69.0%</b>	<b>67.4%</b>	<b>65.0%</b>	<b>43.0%</b>	<b>55.2%</b>
Current loans and borrowings	10.1%	4.3%	4.3%	4.4%	3.8%	4.2%	4.3%	4.5%	4.7%	5.3%
Other current financial liabilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.4%	0.0%
Trade payables	2.3%	1.3%	1.2%	0.7%	0.8%	0.6%	0.7%	0.8%	0.9%	1.0%
Other current liabilities	2.5%	4.3%	4.2%	3.9%	3.6%	2.7%	2.7%	3.0%	3.1%	3.6%
Liabilities classified as held for sale	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Current liabilities</b>	<b>14.8%</b>	<b>9.9%</b>	<b>9.7%</b>	<b>9.1%</b>	<b>8.2%</b>	<b>7.6%</b>	<b>7.7%</b>	<b>8.3%</b>	<b>28.1%</b>	<b>10.0%</b>
<b>Balance sheet total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Independent Research; Photon Energy N.V.

## Photon Energy N.V.

## Cash flow statement

EURm	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>EBT</b>	<b>-5.2</b>	<b>-6.1</b>	<b>-0.9</b>	<b>-2.0</b>	<b>0.1</b>	<b>-1.3</b>	<b>0.1</b>	<b>1.7</b>	<b>2.3</b>	<b>3.1</b>
Depreciation and amortisation	4.8	4.4	5.0	5.3	5.3	6.6	8.5	9.0	9.0	9.0
Profit / loss on sale of property, plant and equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Share of profit of equity-accounted investments	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Other non-cash items	4.8	7.7	3.9	-0.4	1.2	4.3	4.5	4.1	3.8	3.1
<b>Cash earnings</b>	<b>4.3</b>	<b>5.9</b>	<b>7.9</b>	<b>2.8</b>	<b>6.5</b>	<b>9.5</b>	<b>13.0</b>	<b>14.8</b>	<b>15.0</b>	<b>15.2</b>
Trade and other receivables	2.3	1.4	-0.1	0.2	-0.3	-0.4	-0.8	-0.4	-0.1	-0.1
Inventories	-0.2	-0.3	-0.2	-0.2	-0.1	-0.2	-0.4	-0.2	0.0	0.0
Trade and other payables	-7.5	0.9	-0.4	-0.6	0.4	0.4	0.8	0.4	0.1	0.1
Other liabilities	3.3	-3.7	-1.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
<b>Cash flows from operating activities</b>	<b>2.2</b>	<b>4.3</b>	<b>6.2</b>	<b>2.0</b>	<b>6.4</b>	<b>9.3</b>	<b>12.6</b>	<b>14.6</b>	<b>15.0</b>	<b>15.1</b>
Sale of intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purchase of intangible assets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sale of property, plant and equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purchase of property, plant and equipment	0.0	0.0	0.0	0.0	-0.5	-45.7	-22.1	-0.3	-0.3	-0.3
Sale of investments	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purchase of investments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sale of subsidiaries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Purchase of subsidiaries	0.0	0.0	0.0	-0.4	0.0	0.0	0.0	0.0	0.0	0.0
Interest received	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
<b>Cash flows from investing activities</b>	<b>0.0</b>	<b>0.0</b>	<b>2.1</b>	<b>-0.5</b>	<b>-0.5</b>	<b>-45.5</b>	<b>-22.1</b>	<b>-0.2</b>	<b>-0.2</b>	<b>-0.3</b>
Proceeds from issuance of ordinary shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sale / purchase of treasury shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dividend payment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in financial debt	-0.5	-1.4	-4.5	0.0	15.8	32.0	11.4	-8.3	-8.5	-21.5
Change in consolidation method	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Interest expenses	-3.7	-2.9	-3.2	-3.1	-3.2	-4.5	-5.0	-4.9	-4.6	-4.0
<b>Cash flows from financing activities</b>	<b>-4.1</b>	<b>-4.3</b>	<b>-7.7</b>	<b>-1.3</b>	<b>12.6</b>	<b>27.6</b>	<b>6.4</b>	<b>-13.2</b>	<b>-13.1</b>	<b>-25.5</b>
Exchange rate and consolidation effects	-0.3	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Change in cash and cash equivalents	-2.0	-0.1	0.7	0.3	18.6	-8.7	-3.0	1.1	1.6	-10.6
Cash and cash equivalents at the beginning of the period	7.0	4.7	4.6	5.3	5.4	24.1	15.4	12.4	13.5	15.1
<b>Cash and cash equivalents at the end of the period</b>	<b>4.7</b>	<b>4.6</b>	<b>5.3</b>	<b>5.4</b>	<b>24.1</b>	<b>15.4</b>	<b>12.4</b>	<b>13.5</b>	<b>15.1</b>	<b>4.5</b>
Current financial assets	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<b>Cash and cash equivalents including current financial assets</b>	<b>4.7</b>	<b>4.6</b>	<b>5.3</b>	<b>6.0</b>	<b>24.6</b>	<b>15.9</b>	<b>12.9</b>	<b>14.0</b>	<b>15.6</b>	<b>5.0</b>
Cash earnings incl. interest paid/received	0.6	3.0	4.7	-0.3	3.4	5.1	8.1	9.9	10.5	11.2
Cash flows from operating activities incl. interest paid/received	-1.5	1.3	3.0	-1.1	3.3	4.9	7.7	9.7	10.4	11.2

Source: Independent Research; Photon Energy N.V.

## Photon Energy N.V.

## Key figures

	2013	2014	2015	2016	2017E	2018E	2019E	2020E	2021E	2022E
<b>Growth analysis</b>										
Revenue	-14.2%	-15.2%	13.3%	-1.7%	13.4%	16.9%	28.5%	11.0%	2.0%	2.0%
EBITDA growth	-	5.5%	75.8%	6.6%	18.2%	23.5%	40.4%	15.1%	2.1%	1.9%
EBIT growth	-	-	-	15.5%	91.2%	20.7%	65.0%	31.2%	5.1%	4.3%
EBT growth	-	-	-	-	-	-	-	2092.5%	34.4%	38.1%
EPS growth	-	-	-	-	-	-	-	-	43.8%	45.3%
<b>Margin analysis</b>										
EBITDA margin	23.9%	29.7%	46.1%	50.0%	52.2%	55.1%	60.2%	62.5%	62.5%	62.5%
EBIT margin	neg.	neg.	8.4%	9.8%	16.6%	17.1%	22.0%	26.0%	26.7%	27.4%
EBT margin	neg.	neg.	neg.	neg.	0.6%	neg.	0.3%	6.9%	9.0%	12.2%
Net margin	neg.	neg.	neg.	neg.	neg.	neg.	neg.	4.6%	6.5%	9.3%
<b>Yield analysis</b>										
ROI	-4.9%	-5.5%	-1.9%	-3.0%	-0.2%	-1.1%	-0.2%	0.7%	1.0%	1.6%
ROCE	neg.	neg.	1.0%	1.2%	2.4%	2.2%	2.6%	3.3%	3.6%	4.0%
ROE	-24.5%	-18.5%	-6.1%	-10.1%	-0.6%	-5.0%	-0.7%	2.7%	3.7%	5.2%
ROIC	-1.3%	-0.8%	1.0%	1.2%	2.2%	2.0%	2.5%	3.2%	3.5%	4.1%
<b>Balance sheet analysis</b>										
Equity ratio	29.5%	30.1%	31.7%	27.8%	22.6%	23.4%	24.9%	26.7%	29.0%	34.8%
Equity ratio as defined in the bond 2017/22 covenants*	32.2%	33.8%	35.9%	31.3%	25.1%	25.7%	27.4%	29.5%	32.2%	39.3%
Risk bearing capital	29.4%	30.1%	31.7%	26.9%	22.0%	23.1%	24.8%	26.7%	29.0%	34.8%
Equity / non-current asset ratio	33.1%	33.7%	36.1%	32.0%	32.1%	27.5%	28.2%	30.8%	34.1%	38.4%
Equity + non-current liabilities / non-current asset ratio	95.5%	100.8%	102.8%	104.8%	130.7%	108.6%	104.7%	105.8%	84.7%	99.4%
Asset intensity	89.2%	89.4%	87.8%	86.7%	70.2%	85.1%	88.1%	86.7%	85.0%	90.6%
Working capital (EURm)	-0.7	0.8	1.1	1.9	2.0	2.3	2.9	3.3	3.3	3.4
Working capital / revenue	-18.9%	0.3%	6.8%	11.3%	13.3%	12.5%	11.8%	12.5%	13.0%	13.0%
<b>Debt ratios</b>										
Total financial debt (EURm)	56.3	55.1	51.0	53.1	68.7	100.5	111.6	103.1	94.6	73.1
Net financial debt (EURm)	51.6	50.4	45.7	47.1	44.1	84.6	98.7	89.1	78.9	68.1
Total financial debt / adjusted EBITDA	20.3	12.4	8.2	8.0	8.0	9.0	8.1	7.1	6.4	5.3
Net financial debt / adjusted EBITDA	18.0	11.4	7.4	7.1	6.0	6.8	7.0	6.2	5.4	4.7
Total financial debt / capital	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6
Net gearing	1.9	1.8	1.6	1.9	1.9	2.4	2.3	2.1	1.8	1.4
Adjusted EBITDA interest coverage	0.9	1.4	2.0	2.1	2.4	2.1	2.7	3.1	3.4	3.9
Adjusted EBIT interest coverage	-	0.0	0.4	0.4	0.7	0.6	0.9	1.2	1.4	1.7
<b>Cash flow analysis</b>										
Cash earnings incl. interests (EURm)	0.6	3.0	4.7	-0.3	3.4	5.1	8.1	9.9	10.5	11.2
Cash flows from operating activities incl. interests (EURm)	-1.5	1.3	3.0	-1.1	3.3	4.9	7.7	9.7	10.4	11.2
Funds from operations (FFO) (EURm)	-0.6	1.4	3.2	2.9	4.3	4.8	7.8	9.5	10.1	10.8
FFO of segment Production of Electricity (EURm)	3.7	5.3	6.0	3.9	6.6	7.0	10.0	11.7	12.2	12.9
FFO of segment O&M (EURm)	-0.6	-0.5	-1.0	-0.4	0.2	0.3	0.4	0.4	0.5	0.6
FFO of other segments and consolidation (EURm)	-3.7	-3.3	-1.8	-0.5	-2.4	-2.5	-2.7	-2.7	-2.7	-2.7
Free cash flow (FCF) (EURm)	-1.5	1.3	3.0	-1.5	2.8	-40.7	-14.4	9.4	10.1	10.9
Cash earnings incl. interests / revenue	4.6%	25.4%	35.6%	neg.	22.6%	29.4%	36.4%	40.1%	41.5%	43.5%
Cash flows from operating activities incl. interests / revenue	neg.	11.2%	22.4%	neg.	22.5%	28.3%	34.6%	39.3%	41.3%	43.3%
FFO / revenue	neg.	11.7%	23.7%	22.0%	29.0%	27.9%	34.8%	38.6%	39.9%	41.9%
FFO of segment Production of Electricity / revenue	33.5%	51.8%	56.6%	35.4%	55.6%	49.6%	53.3%	55.8%	57.3%	59.8%
FFO of segment O&M / revenue	neg.	neg.	neg.	neg.	4.7%	7.2%	7.7%	8.6%	10.1%	10.7%
FCF / revenue	neg.	11.2%	22.4%	neg.	19.0%	neg.	neg.	38.1%	40.1%	42.2%

Source: Independent Research; Photon Energy N.V.

\* equity / equity + interest bearing liabilities

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## Disclaimer

### Recommendations concerning particular shares (since December 18, 2009)

- Buy: According to our assessment, the stock will rise by at least 15% in absolute terms within a 6-month period.
- Hold: According to our assessment, the stock will rise by between 0% and 15% in absolute terms within a 6-month period.
- Sell: According to our assessment, the stock will decline in absolute terms within a 6-month period.

### Recommendations concerning particular shares (until December 17, 2009)

- Buy: According to our assessment, the stock will rise by at least 15% in absolute terms within a 6-month period.
- Accumulate: According to our assessment, the stock will rise by between 0% and 15% in absolute terms within a 6-month period.
- Reduce: According to our assessment, the stock will decline by between 0% and 15% in absolute terms within a 6-month period.
- Sell: According to our assessment, the stock will decline by least 15% in absolute terms within a 6-month period.

### **Compulsory information required under Section 34b of the German Securities Trading Act (WpHG) and Art. 20 of Regulation (EU) No. 596/2014 in connection with Delegated Regulation (EU) 2016/958**

#### Key sources of information

Key sources of information used in the preparation of this document are publications in foreign and domestic media such as information services (e.g. Reuters, VWD, Bloomberg, DPA-AFX etc.), the financial press (e.g. Börsenzeitung, Handelsblatt, FAZ, Wall Street Journal, Financial Times etc.), specialised journals, published statistics, rating agencies and publications of the issuers under coverage.

#### Quarterly overview

The quarterly overview of all financial analyses of the past quarter contains recommendations sorted by investment categories (quarterly overview in accordance with Art. 6 Section 3 of Delegated Regulation (EU) 2016/958) and is published on the homepage of Independent Research GmbH under <http://irffm.de/images/stories/pdf/votenzaehlung.pdf>.

#### Summary of the valuation principles used:

Analyses of shares:

In valuing companies standard and accepted valuation methods (amongst others the Discounted Cash Flow Method (DCF Method), Peer-Group Analysis) are applied. Under the DCF Method the net value of the issuer is calculated, which represents the sum of the discounted company results, i.e. the net present value of the issuer's future net cash flows. The net value is therefore determined with reference to the company's anticipated future results and the discount rate applied. Under the Peer-Group Analysis Method issuers quoted on the Stock Exchange are valued with reference to the comparison of valuation multiples (e.g. price/earnings ratio, price/book value, enterprise value/sales, enterprise value/EBITDA, enterprise value/EBIT). Comparability of the valuation multiples is primarily determined by business activity and economic prospects. A complete description of the valuation models is published on the homepage of Independent Research GmbH under <http://irffm.de/images/stories/pdf/bewertungsmodelle.pdf>.

Sensitivity of the valuation parameters:

The figures used for company valuation are derived from the income statement, the cash flow statement and the balance sheet, these are numerical estimates and therefore subject to risks. These may change at any time without prior notice.

Apart from the valuation method applied, there is a distinct risk that the share price target may not be reached in the anticipated period of time. Risks include unforeseen changes in competitive pressure or in demand for the issuer's products. Such fluctuations in demand may arise as a result of changes in technology, the overall level of economic activity and in some cases as a result of changes in moral concepts. Changes in tax law, in exchange rates and, in certain industries, in regulations are other factors which can influence valuations. The illustration of valuation methods and risk factors made above is not exhaustive.

Timing conditions of planned updates:Analyses of shares:

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Emittent	Conflicts of interest
Photon Energy N.V.	5, 6

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- 5) made this financial analysis available to the issuer prior to publication without the Valuation/Forecasts section and subsequently amended it.
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