Deloitte.

Valuing wind and solar farm developers.

January 2011 – 2nd edition

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1. Foreword

In recent years investors all over the world have paid increasingly attention to the renewable energy industry.

This trend has translated into rapid renewable energy commercialisation and considerable industry expansion, of which the wind and solar photovoltaic (PV) industries are good examples. Investment in new capacity of renewable energy increased from approx. USD 65bn in 2006 to approx. USD 162bn in 2009. In 2010 investments are expected to reach USD 175-200bn globally.[1]

According to the International Energy Agency, wind and solar energy's share of global energy generation will increase significantly in the next 10-20 years. These 2 energy sources alone are expected to generate 15-20% of total energy generated in 2030. Today this number is 3%. Due to great political focus on generating an increasing share of future global energy demand from renewable energy sources, combined with the major focus on wind and solar industries, we have found it interesting to examine the valuation of wind and solar farm assets.

[1] www.renewableenergyfocus.com

2. Executive summary

In the past few years, focus on renewable energy has increased rapidly which has led to high growth in investments in renewable energy assets. Especially wind and solar assets have been exposed to great interest from investors. Due to expectations for these 2 markets it is interesting to identify the structure of the assets held by wind and solar farm developers and to find suitable methods to value such assets. This paper addresses how and why multiple regression analysis is a good valuation tool for wind and solar assets. We have also analysed how to apply such analysis in practice.

Due to differences in wind and solar assets, we have performed 2 separate analyses to recognise that these differences most likely will yield different EV/MW multiples.

Our first analysis of wind assets has led to the conclusion that installed capacity under construction and in late stage affects the enterprise value of transactions significantly. Additionally we have concluded that investors in wind assets do not assign any significant value to capacity in early stage.

Our second analysis has been performed on the basis of transactions in the solar farm industry. Data accessibility has limited the size of the dataset. This has led to the exclusion of early-stage capacity as an explanatory variable as well as treating capacity under construction and in late stage as an explanatory variable, which we have named non-installed capacity.

Even though the coefficient of determination for the solar analysis has come out low compared to the wind farm analysis, it has been concluded that installed and non-installed capacity affect the enterprise value of solar assets significantly.

Due to the size of the dataset in the wind farm industry, we have been able to perform additional analyses. Firstly we have analysed whether total installed capacity affects enterprise value when reaching a certain level (in this analysis 200 MW). By using multiple regression with dummy variables, we have been able to conclude that when total installed capacity in a transaction is larger than 200 MW, the price for installed capacity is higher. Secondly we have analysed whether time in general combined with the economic crisis (before and after mid-2008) have affected the enterprise value of wind assets. Our analysis indicates that prices have not decreased, which could have been expected. We do not recommend to directly apply the multiples from these analyses for valuation purposes, among other things due to increased variance in the parameter estimates.

Since the release of the first edition of this analysis in September 2010 we have been able to find an additional 10 transactions suitable for our analysis of wind assets and an additional 14 transactions for our analysis of solar assets. For the wind analysis the additional 10 transactions have not led to noticeable changes in the conclusions. This just underpins the strength of the original analysis. The additional 14 transactions in the solar analysis have led to a stronger conclusion as the explanatory power has increased from 71% to 83%. The stronger conclusion is also reflected in a narrower uncertainty interval. Furthermore the additional transactions have led to an increase in the EV/MW multiple for installed MWs from EUR 3.6m to EUR 4.0m in the updated solar analysis.

Presumably our conclusions drawn from the 4 analyses will become stronger as we collect new transaction data and obtain a larger dataset. Especially we expect to be able to make even stronger conclusions in the solar analysis and in the size and time analyses of wind assets.

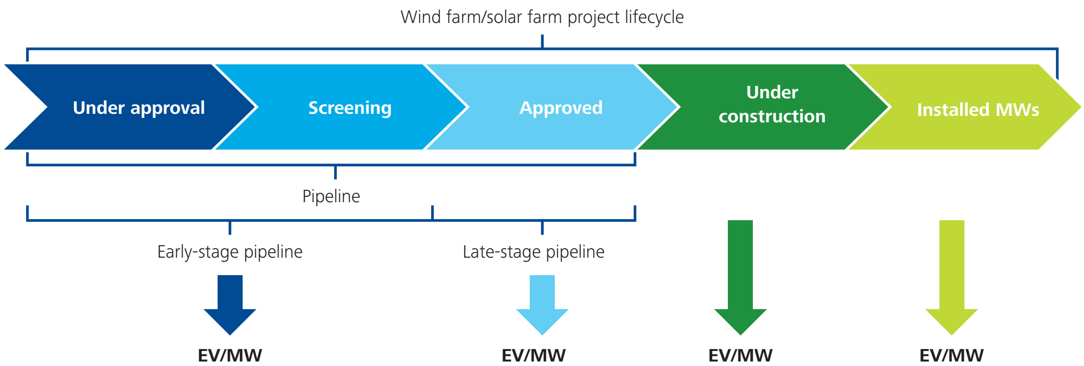
3. Introduction

This paper addresses how multiple regression analysis of transaction multiples can be used as a benchmarking tool to support a more comprehensive valuation based on a cash flow model.

Sections 4-6 are structured in the same way. First we present the technical considerations underlying the analysis followed by practical examples that illustrate how the results can be applied in a valuation perspective.

From our point of view, one of the main challenges is the determination of the market value of wind and solar capacity in different stages of the project lifecycle. We define a project lifecycle for wind and solar developers as illustrated in the figure below. We recognise that transaction prices in the development stages depend on other factors than capacity, e.g. geographic factors (meteorological conditions, local tax rules, subsidies, etc.), procurement capabilities, power price agreements, operating efficiency, financing, etc. Due to lack of information these factors are disregarded in our analysis, and therefore MW capacity in the different stages is seen as the only explanatory variable on transaction prices.

Project lifecycle of wind and solar developers



Source: Deloitte

We recognise that wind and solar assets have different characteristics. Therefore we have performed 2 separate analyses – one solely based on transactions in the wind farm industry and one based solely on transactions in the solar farm industry. This approach yields "clean" multiple estimates for the different stages of the project. This indirectly implies that in our analyses we assume that there is no interaction effect between holding wind and solar farm assets. The multiple regression analysis is a market-based valuation approach, as it is based on data from recent private transactions in the wind and solar farm industry; see appendices A and B for more information on the transactions included in the analyses. In the analyses we try to disaggregate the transactions into the different stages of the project illustrated in the figure on page 5. This disaggregation makes it possible to apply the multiple regression analysis, and also gives us the possibility of assigning separate multiples to each stage of the project.

The quality of a multiple regression analysis is critical dependent on the underlying dataset. Therefore the data collection process becomes important to ensure sufficient data. It is our experience that collection of data is one of the main challenges when using statistical analysis. The accessibility of enterprise value and the total capacity of target's assets divided into the different project lifecycle stages have been some of the overall criteria for selection of transactions for the analyses. In sections 4-6 we give a more thorough introduction to the multiple regression analyses that we have performed. To exemplify the analyses performed, we use a fictive company named Renewable Energy Company (REC) throughout the paper to illustrate how multiple regression can be applied for valuation purposes. REC has wind and solar assets across Europe in the different project lifecycle stages as illustrated in the table below.

Renewable Energy Company (REC)

MV	Early-stage pipeline	Late-stage pipeline	Under construction	Installed MWs
Wind farms	1,600	800	400	200
PV farms	200	100	50	25
Total	**1,800**	**900**	**450**	**225**

Source: Deloitte analysis

4. Choice of method and identification of transactions in the wind farm industry

Our analysis of the wind industry is based on transactions over the past 5 years to secure a sufficient dataset. This enables us to analyse any time or size effects, which we will discuss in section 6. To recognise that geographic factors may affect the enterprise value of wind assets, the majority of the selected transactions are characterised by the target's assets being located in Europe. This is in accordance with the geographic diversity of REC's assets. These criteria have led to 72 transactions which we find suitable for our multiple regression analysis of wind assets. The analysis has been based on the following regression model.

The major challenge that we experienced during our data collection was the classification of transactions into project stages, especially for the early-stages. Moreover not all companies report capacity in the screening stage. We have therefore merged the screening stage with the under approval stage into what we name early-stage. Based on model (1) we find that installed capacity, capacity under construction and capacity in late stage affect the enterprise value of wind assets significantly. Also based on our analysis, we can conclude that early-stage capacity has no statistically significant impact on the enterprise value.

One advantage by using multiple regression analysis is that we can estimate EV/MW multiples for capacity in each stage of the project lifecycle. Based on (1) we find that the EV/MW multiples for installed capacity, capacity under construction and capacity in late stage is EUR 1.6m, EUR 1.1m and EUR 0.5m. The analysis has a coefficient of determination (~ R-squared) of 0.94, which can be interpreted as the analysis having a high statistically explanatory power. In other words, 94% of the variation in enterprise value for wind assets can be explained by the EV/MW multiples of each stage in the project lifecycle. Applying these multiples on REC's assets yields a base case value of the wind assets of EUR 1,169m. The results of the analysis are summarised in the table below.

(1) $$EV_{Wind} = \alpha + \beta_1 \cdot \text{Installed MW}_{Wind} + \beta_2 \cdot \text{MW under construction}_{Wind} + \beta_3 \cdot \text{MW late-stage pipeline}_{Wind} + \beta_4 \cdot \text{MW early-stage pipeline}_{Wind} + \varepsilon_i$$

Regression and valuation of wind farms

EURm	Early-stage pipeline	Late-stage pipeline	Under construction	Installed MWs
EV/MW coefficient[1]	**(0.0)**	**0.5**	**1.1**	**1.6**
Significance (p-value)	0.15	0.00	0.00	0.00
Upper 95%	0.0	0.7	1.5	1.8
Lower 95%	(0.1)	0.4	0.7	1.5
EV/MW multiple applied	**0.0x**	**0.5x**	**1.1x**	**1.6x**
REC wind MWs	1,600	800	400	200
REC wind EVs	0	407	435	327
REC total EV				**1,169**

[1] Transactions (n): 72, R-square: 0.94, Adj. R-square: 0.93

Source: Deloitte analysis

Wind farm valuation uncertainty

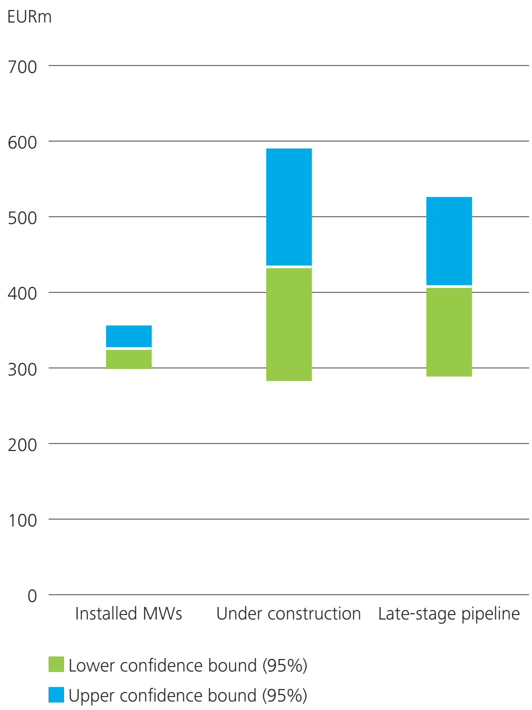
EURm	Late-stage pipeline	Under construction	Installed MWs
Upper EV/MW multiple	**0.7x**	**1.5x**	**1.8x**
REC wind MWs	800	400	200
REC wind EVs	525	588	357
REC upper EV			**1,470**
Lower EV/MW multiple	**0.4x**	**0.7x**	**1.5x**
REC wind MWs	800	400	200
REC wind EVs	289	281	298
REC lower EV			**867**

Source: Deloitte analysis

Multiple regression analysis is associated with uncertainty, just like any other valuation method. One advantage of statistical models compared to other models is that the uncertainty is easier to quantify. The uncertainty can be expressed by the statistical term "standard error". The standard error is calculated for each EV/MW multiple and can be used to determine a lower and upper boundary, i.e. a value interval at a certain confidence level. Our analysis is based on a 95% confidence level. This can be interpreted as the EV/MW multiple estimate being within this interval with 95% confidence. The lower boundary for the EV/MW multiples is EUR 1.5m, EUR 0.7m and EUR 0.4m for installed, under construction and late-stage capacity. The upper boundary for the EV/MW multiples is EUR 1.8m, EUR 1.5m and EUR 0.7m for installed, under construction and late-stage capacity.

Applying these lower and upper boundaries in the valuation of REC's wind assets to determine a lower and upper value yields the results presented in the table above. The table illustrates that the EV/MW multiples for installed capacity are associated with least uncertainty. Based on these boundaries our analysis indicates that the value of REC's wind assets lies within the interval of EUR 900-1,500m with 95% certainty. These estimates are approx. 30% lower/higher compared to the base case value.

Wind farm valuation uncertainty



Source: Deloitte

5. Choice of method and identification of transactions in the solar farm industry

Our analysis of the solar industry is based on transactions over the past 4 years. Data accessibility has made it difficult to include transactions further back. To recognise that geographic factors may impact the enterprise value of wind assets, the majority of the selected transactions are characterised by the target's assets being located in Europe. This is in accordance with the geographic diversity of REC's assets. Based on these criteria, we have identified 32 transactions which we find suitable for our multiple regression analysis of the solar industry. This analysis has been based on the following regression model (2).

One major challenge in the process of collecting data has been the lack of data for transactions, including capacity in the early stage of the project lifecycle. We exclude this parameter from the solar analysis to reduce the probability of obtaining spurious results due to limited data. Furthermore it has not been possible to find enough transactions in which capacity in the under construction stage and late stage is reported separately. Therefore we treat capacity in these 2 stages as one explanatory variable, which we name non-installed capacity. Based on (2) we find that installed capacity and non-installed capacity affect the enterprise value of solar assets significantly.

The EV/MW multiples estimated for installed capacity and non-installed capacity are EUR 4.0m and EUR 0.2m. These multiple estimates differ significantly from those estimated in the wind asset analysis in section 4. This is in accordance with our a priori expectations that wind and solar assets differ by nature and therefore by value. The analysis has a coefficient of determination of 84%, which is lower than the wind asset analysis. However this is in line with our expectations, as we have aggregated the 2 variables (capacity under construction stage and late-stage) and left out early-stage capacity due to limited data. In other words, we have reduced the number of explanatory variables that explain the variation in the enterprise value of solar assets. In addition this analysis is based on a smaller dataset which also may affect the coefficient of determination downwards. The coefficient of determination has increased by approx. 13% compared to the original analysis. Applying the multiples on REC's assets yields a base case value of the solar assets of approx. EUR 126m. The results of this analysis are summarised in the table below.

$$EV_{Solar} = \alpha + \beta_1 \cdot \text{Installed } MW_{Solar} + \beta_2 \cdot (\text{MW under construction}_{Solar} + \text{MW late-stage pipeline}_{Solar}) + \varepsilon_i$$

$$\Downarrow \tag{2}$$

$$EV_{Solar} = \alpha + \beta_1 \cdot \text{Installed } MW_{Solar} + \beta_2 \cdot (\text{non installed}_{Solar}) + \varepsilon_i$$

Regression and valuation of solar farms

EURm	Early-stage pipeline	Late-stage pipeline/under construction	Installed MWs
EV/MW coefficient[1]	**n/a**	**0.2**	**4.0**
Significance (p-value)	n/a	0.0	0.0
Upper 95%	n/a	0.2	4.7
Lower 95%	n/a	0.1	3.3
EV/MW multiple applied	**n/a**	**0.2x**	**4.0x**
REC solar MWs	n/a	150	25
REC solar EVs	n/a	27	99
REC solar total EV			**126**

[1] Transactions (n): 32, R-square: 0.84, Adj. R-square: 0.83

Source: Deloitte analysis

We express the uncertainty in terms of the standard error for each EV/MW multiple and on lower and upper boundaries at a 95% confidence level. The lower EV/MW multiple is found to be EUR 3.3m and EUR 0.1m for installed and under construction/late-stage capacity. The upper EV/MW multiple is found to be EUR 4.7m and EUR 0.2m for installed and under construction/late-stage capacity. This is summarised in the table below.

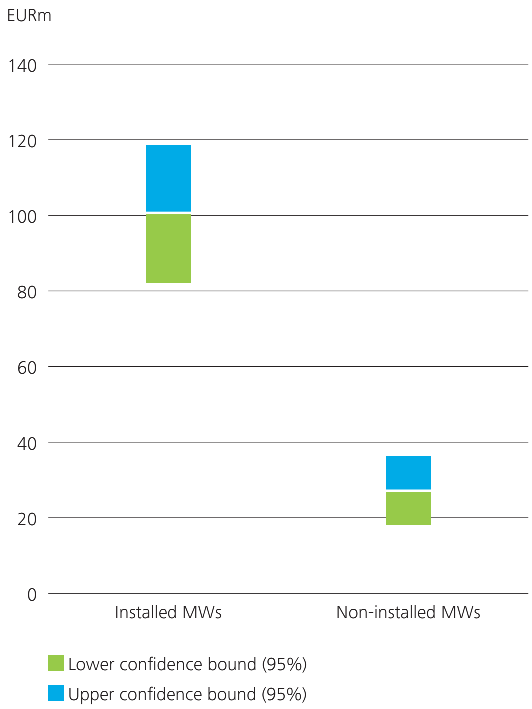
Solar farm valuation uncertainty

EURm	Early-stage pipeline	Late-stage pipeline/under construction	Installed MWs
Upper EV/MW multiple	**n/a**	**0.2x**	**4.7x**
REC solar MWs	n/a	150	25
REC solar EVs	n/a	36	118
REC solar upper EV			**153**
Lower EV/MW multiple	**0.0x**	**0.1x**	**3.3x**
REC solar MWs	0.0x	150	25
REC solar EVs	0.0x	18	81
REC solar lower EV			**99**

Source: Deloitte analysis

Applying these lower and upper boundaries in the valuation of REC's solar assets to determine a lower and upper value yields the results presented in the table above. Based on these boundaries, our analysis indicates that the value of REC's solar assets lies within the interval of EUR 100-155m with 95% certainty. These estimates are approx. 20% lower/higher compared to the base case value. See the figure to the right for a summary. The value range of the solar analysis is wider than in the wind analysis. This is partially due to the fact that the solar analysis is based on a limited dataset, which leads to more uncertainty in the EV/MW multiples.

Solar farm valuation uncertainty



Source: Deloitte

6. Additional analysis of wind farm assets – time and size effects

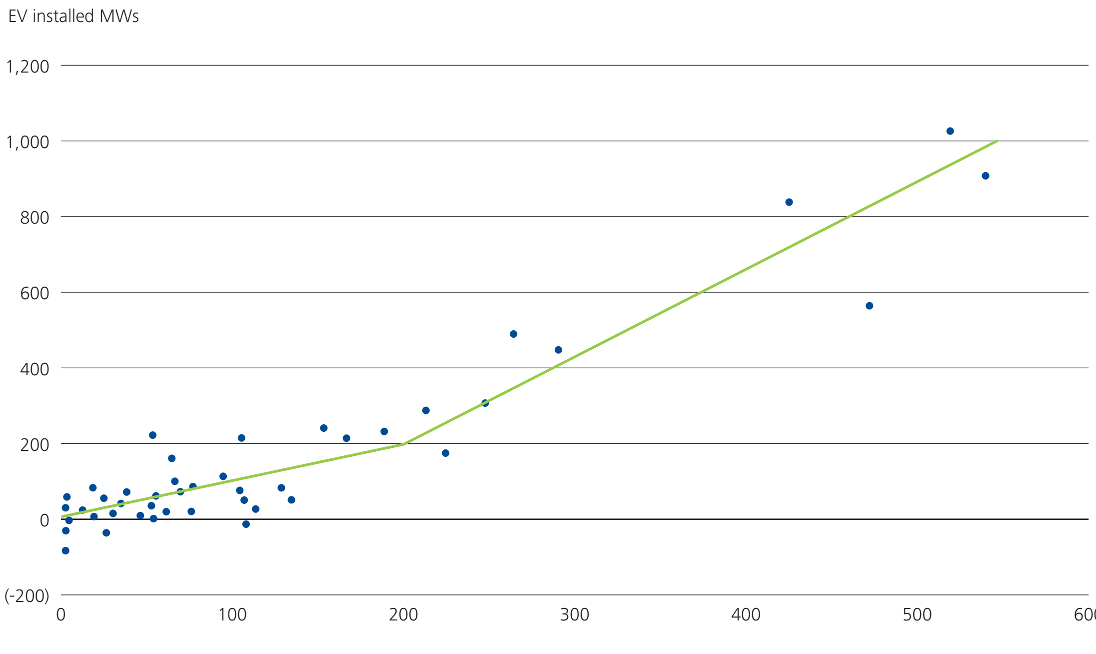
The size of the dataset used in the wind asset analysis has enabled further analysis. More specifically we have analysed whether the size of target's installed capacity affects the enterprise value of wind assets and whether transaction prices have changed from one period to another. The number of transactions in the dataset makes it difficult to analyse both effects at the same time. In both analyses we have split the original dataset into 2 groups based on either size or time.

For the purpose of these 2 analyses, we have included dummy variables in our regression model. This allows us to allocate the isolated effect on EV to each of the included independent variables, and at the same time split the dataset into 2 subgroups by the use of dummy variables. A dummy variable can take the value 1 or 0, depending on whether a specific statement is fulfilled or not, e.g. "Is the installed capacity of the transaction greater than 200 MW?" or "Is the transaction date earlier or later than a specific date?". We use the dummy variable in interaction with the other individual MW parameters. This enables us to calculate 2 (or more) multiples for each stage in the project lifecycle depending on the dummy statement, e.g. one EV/MW estimate for installed capacity greater and lower than 200 MW. This is illustrated in models (3) and (4) below.

6.1 Testing for size effects on wind farm assets

In the figure below, the transactions used for the wind asset analysis are illustrated based on installed capacity and enterprise value of installed capacity. The green line represents the estimated regression model. Based on the distribution of the transactions in the figure, this preliminary analysis indicates a size effect in terms of installed capacity. This is considered to be a reasonable assessment, as potential synergy effects most likely will be an increasing function of installed capacity, which may affect enterprise value positively.

Size effect on EV of installed MW



Source: Deloitte

Note: EV installed MWs are calculated as the transaction price less MW under construction and MW late-stage pipeline multiplied by their estimated multiples. This can lead to negative EVs, which are economically unreasonable, but are accepted in the model. Expressed as a formula this becomes: $EV_{\text{Installed MWs}} = EV_{\text{Wind farm}} - \beta_3 \cdot \text{MW under construction}_{\text{Wind}} - \beta_4 \cdot \text{MW late-stage pipeline}_{\text{Wind}}$

Based on thorough analysis, we find that the following model is the most appropriate model for analysing whether total installed capacity affects the enterprise value of wind assets.

Due to the structure of (3), we test whether the EV/MW multiple for installed capacity changes at the 200 MW point. We therefore obtain 2 multiple estimates for installed capacity; 1) when total installed capacity is below 200 MW and 2) when total installed capacity exceeds 200 MW. The difference between the two represents the value of having a total installed capacity above 200 MW. In our analysis we find the added value to be approx. EUR 0.5m per MW. This difference is statistically significant. We conclude that total installed capacity affects the enterprise value of wind assets when total capacity is greater than 200 MW. Therefore small wind farm developers trade at a lower multiple than large wind farm developers.

(3) $$EV_{Wind} = \alpha + \beta 1 \cdot \text{Installed MW}_{Wind} + \beta_2 \cdot D_{\text{Inst. Cap. Wind>200}} \cdot \text{Installed MW}_{Wind} + \beta_3 \cdot \text{MW under construction}_{Wind} + \beta_4 \cdot \text{MW late-stage pipeline}_{Wind} + \varepsilon_i$$

Size dummy regression

EURm	Late-stage pipeline	Under construction	Installed MWs < 200	Installed MWs > 200
EV/MW coefficient[1]	**0.4**	**0.8**	**1.2**	**1.7**
Significance (p-value)	0.00	0.00	0.00	0.01
Upper 95%	0.5	0.9	1.5	2.4
Lower 95%	0.3	0.6	0.8	0.9
EV/MW multiple applied	**0.4x**	**0.8x**	**1.2x**	**1.7x**
REC wind MWs	800	400	0	200
REC wind EVs	320	315	0	334
REC total EV				**969**

[1] Transactions (n): 72, R-square: 0.94, Adj. R-square: 0.94

Source: Deloitte analysis

The table above contains the results of our analysis in which we test for size effect. Based on the estimated EV/MW multiples, we obtain a lower enterprise value of REC's wind assets compared to the original analysis based on model 1 in section 4. The lower value is caused by lower EV/MW multiples for capacity in under construction stage and late-stage pipeline. The value estimate is still within the original confidence interval in section 4. We find the lower EV/MW multiples to be EUR 0.9m, EUR 0.8m, EUR 0.6m and EUR 0.3m for installed capacity over 200 MW, for installed capacity under 200 MW, under construction and late-stage capacity. We find the corresponding upper limits to be EUR 2.4m, EUR 1.5m, EUR 0.9m and EUR 0.5m. These boundaries are determined at a 95% confidence level.

Wind farm valuation uncertainty

EURm	Late-stage pipeline	Under construction	Installed MWs < 200	Installed MWs > 200
Upper EV/MW multiple	**0.5x**	**0.9x**	**1.5x**	**2.4x**
REC wind MWs	800	400	0	200
REC wind EVs	417	377	0	488
REC upper EV				**1,282**
Lower EV/MW multiple	**0.3x**	**0.6x**	**0.8x**	**0.9x**
REC wind MWs	800	400	0	200
REC wind EVs	223	253	0	179
REC lower EV				**655**

Source: Deloitte analysis

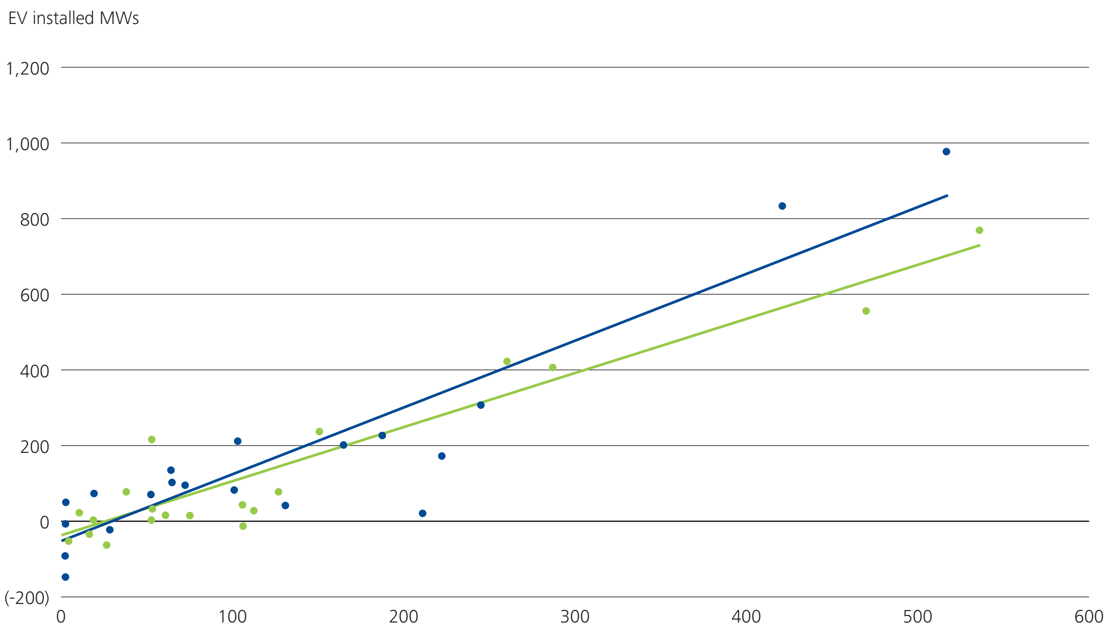
Applying these multiples on REC's wind assets yields a value interval which is presented in the table above. We estimate a value interval for REC's wind assets at EUR 650-1,300m with 95% certainty. These lower and upper boundaries are approx. 15-23% lower than the upper and lower boundaries in section 4.

We still recommend using the original analysis in section 4 when applied to value wind assets as the variance of the EV/MW installed estimate increases significantly in the size analysis.

6.2 Testing for time effects on wind farm assets

To analyse for time effect, we again use a dummy variable in interaction with installed capacity. We have chosen the split date to be 30 June 2008. We believe that in this way we can catch time effect in transaction prices in general and possible effects due to the economic crisis. However we emphasise that these 2 effects cannot be analysed on an isolated basis. The figure below illustrates the dataset for this analysis in 2 dimensions: Installed MW and EV installed MWs with the data split into 2 subgroups depending on the transaction date. The blue and green lines represent the estimated regression model before and after the split date. Based on this preliminary analysis, there seems to be a time effect. We will analyse whether this effect is statistically significant in the following.

Time effect on EV of installed MW



Source: Deloitte

Note: EV installed MWs are calculated as the transaction price less MW under construction and MW late-stage pipeline multiplied by their estimated multiples. This can lead to negative EVs, which are economically unreasonable, but are accepted in the model. Expressed as a formula this becomes: $EV_{\text{Installed MWs}} = EV_{\text{Wind farm}} - \beta3 \cdot \text{MW under construction}_{\text{Wind}} - \beta4 \cdot \text{MW late-stage pipeline}_{\text{Wind}}$

Based on a thorough analysis, we find that (4) below is the most appropriate model for analysing whether the transaction date affects the enterprise value of wind assets.

$$EV_{Wind} = \alpha + \beta 1 \cdot \text{Installed MW}_{Wind} + \beta_2 \cdot D_{\text{After 30 June 2008}} \cdot \text{Installed MW}_{Wind} + \beta_3 \cdot \text{MW under construction}_{Wind} + \beta_4 \cdot \text{MW late-stage pipeline}_{Wind} + \varepsilon_i \quad (4)$$

In (4) the dummy variable is only activated (~ the variable takes the value 1) when the transaction is completed later than 30 June 2008. The difference between the 2 periods is approx. EUR 0.4m and is statistically significant. However the figure indicates that the difference may be caused by transactions of 2 large companies in the time after the split date; transactions for which we could have controlled with our size dummy included (would have required more observations to do that). Therefore we do not recommend using the EV/MW multiples of this regression, but recommend that the results of section 4 are used. However in general, we can conclude that the economic crisis has not affected transaction prices adversely. Over time more data may lead to stronger conclusions, with which we can prove or reject that the enterprise value of wind assets has changed over time.

Appendix A:
Private transaction data from the wind farm industry

Comparable wind power companies in transactions

Target	Bidder	Date	EV EURm	Wind capacity (MW) Installed	Under constr.	Late-stage	Early-stage	Geography
Windpark Kesfeld-Heckhuscheid GmbH &Co. KG and Windpark Kirf GmbH & Co. KG	Allianz Renewable Energy Management GmbH	30 September 2010	40	41	0	0	0	Germany
IVPC Power 5 Srl	ERG Renew Spa	23 July 2010	224	102	0	0	0	Italy
parque Eolico La Penuca SL	Elektrizitaets Gesellschaft Laufenburg AG	29 June 2010	59	33	0	0	0	Spain
E.ON Climate & Renewables UK Operations Limited (St. Breock wind farm)	Renewable Energy Generation Limited	14 June 2010	5	5	0	0	0	UK
Ardrossan Windfarm (Scotland) Ltd	Infinis Energy Limited	21 May 2010	62	30	0	0	0	Scotland
Kvalheim Kraft	DONG Energy	12 April 2010	19	4	19	0	0	Norway
Infigen (French assets)	European Renewable Energy	06 April 2010	71	52	0	0	0	France
Boralex Plestan SNC	KlimaInvest AS	31 March 2010	9	0	13	0	0	France
Italgest Wind Srl	Enel Green Power	22 February 2010	20	0	0	184	0	Italy
Gamesa Energia (El andevalo)	Inberdrola Renewables	10 February 2010	320	244	0	0	0	Spain
Scout Morr wind farm	HgCapital Renewable Power Partners Fund	01 February 2010	116	65	0	0	0	UK
GLID Wind Farms Topco Ltd	TCW Energi fund XIV & European Clean Energy Fund	28 October 2009	187	220	0	0	0	UK
Babcock & Brown Power Ltd	NextEra Energy Resources LLC	01 October 2009	242	185	0	0	0	USA
BP Energy India Pvt	Green Infra Limited	16 September 2009	92	100	0	0	0	India
Everpower Wind Holdings	Terra Firma Capital Partners Limited	26 August 2009	246	63	57	73	671	USA
Kallista Energies Renouvelables and Kallista France	Holding Energies Renouvelables	03 August 2009	220	163	0	0	0	France
Danta de Energias SA	Agrupacio Energias Renovables SA	13 May 2009	97	130	40	0	0	Spain
Karcino	DONG Energy	18 March 2009	80	0	51	0	0	Poland
Te Rere Hau Wind Farm	NZWL-TRH Limited	09 March 2009	17	27	22	0	0	New Zealand
Babcock & Brown Wind Partners	Formento de construcciones y contratas SA	08 January 2009	840	421	0	0	0	Spain
Parque Eolico de Arganil, Lda	Infraventus SA	06 December 2008	122	0	102	0	0	Portugal
Enersis - Sociedade Gestora de Participacoes Sociais S.A.	Magnum Capital Industrial Partners	17 November 2008	1,150	515	156	0	0	Portugal
Eclipse Energy UK PLC	Vattenfall AB	01 November 2008	42	0	0	240	0	UK
New Green Molise Srl	Alerion Energie Rinnovabili Srl	21 October 2008	130	0	58	15	0	Italy
AMEC Wind Energy	Vattenfall	06 October 2008	164	0	0	573	0	UK
North American wind farms of Airtricity	E.ON AG	04 October 2008	990	210	880	0	6,000	North America
Gortahlle Wind Farm	Green Wind Energy	28 August 2008	90	18	0	3	0	Ireland
Parchi Eolici Ulassai S.r.l.	Saras SpA	01 July 2008	100	72	0	0	24	Italy
Dong Greek wind activities	Mytilineos Holdings	12 June 2008	28	19	0	0	0	Greece
CENAEEL	EDP Renovaveis	12 June 2008	20	14	0	70	0	Brazil
Urvasco Energia S.A	Agrupacio Energias Renovables	07 June 2008	250	150	0	0	0	Spain
ECO Wind Power Limited	Viridian Group Limited	11 April 2008	40	24	80	0	0	Ireland
Eole 76 / Euroscape	EDP Renovaveis	08 April 2008	95	35	8	13	540	France
Acciona Eolica Cesa	Acciona	28 February 2008	1,370	536	138	878	3,400	Spain, Italy, Greece
Parc Eolica L'Aram SL	Fersa Energias Renovables SA	16 January 2008	7	20	0	0	0	Spain

Comparable wind power companies in transactions

Target	Bidder	Date	EV EURm	Wind capacity (MW) Installed	Under constr.	Late-stage	Early-stage	Geography
Explotacion Eolica la Pedrera SL	Fersa Energias Renovables SA	16 January 2008	20	43	0	0	0	Spain
Explotacion Eolica la Pedrera SL	Fersa Energias Renovables SA	16 January 2008	6	11	0	0	0	Spain
Eolica del Pino S.A	Fersa Energias Renovables SA	16 January 2008	17	6	0	0	0	Spain
Fercom Eolica SL	Fersa Energias Renovables SA	16 January 2008	58	106	0	0	0	Spain
Catalana dEnergies Renovables SL	Fersa Energias Renovables SA	16 January 2008	32	58	0	0	0	Spain
Eolica Ceiplowody Sp	Fersa Energias Renovables SA	16 January 2008	20	40	0	0	0	Poland
Eolica Warleboo Sp zoo	Fersa Energias Renovables SA	16 January 2008	18	40	0	0	0	Poland
EN Green Energy Private Limited	Fersa Energias Renovables SA	16 January 2008	11	50	0	0	0	India
EN Wind Power Private Limited	Fersa Energias Renovables SA	16 January 2008	22	50	0	0	0	India
EN Renewable Energy Private Limited	Fersa Energias Renovables SA	16 January 2008	15	50	0	0	0	India
Generacion Eolica India Limited	Fersa Energias Renovables SA	16 January 2008	18	31	0	0	0	India
Parque Eolico Hoinojal SL	Fersa Energias Renovables SA	16 January 2008	33	11	0	0	0	Spain
Sinergia Andaluza SL	Fersa Energias Renovables SA	16 January 2008	33	73	0	0	0	Spain
Compagnie Eolienne	Theolia	04 January 2008	50	50	0	0	0	Morocco
Gamesa (Nave windmill park)	Electrabel S.A	21 December 2007	35	38	0	0	0	Portugal
Gamesa	Iberdrola	05 December 2007	566	469	0	0	0	Spain, Portugal
Gamesa (Fafe II and Mourisca)	Electrabel S.A	14 November 2007	94	65	0	0	0	Portugal
Slieve Divena Wind Farm	Airtricity Holdings Limited	05 November 2007	25	30	0	0	0	Ireland
Callis (Four wind farms)	Iberdrola Renovables	29 October 2007	155	0	108	0	0	Hungary
Eolica Kisielice Sp zoo	Fersa Energias Renovables SA	22 October 2007	24	42	0	0	0	Poland
Eolicas de Euskadi	Iberdrola Renovables SA	16 October 2007	232	50	0	0	0	Spain
Energiefonds Rheinland Nr. 46 GmbH & Co. KG	Iberdrola Renovables SA	09 August 2007	30	25	0	0	0	Germany
Energi E2 Renovables Ibericas SL	E.ON AG	07 August 2007	722	260	0	560	0	Spain, Portugal
Valdeconejos wind farm	Infigen Energy	02 August 2007	52	32	0	0	0	Spain
Conjuro Wind Farm	Babcock & Brown	03 July 2007	19	17	0	0	0	Spain
Monte Siexo	Babcock & Brown	10 May 2007	110	64	0	0	0	Spain
Nurri and Andretta	EDF Energies Nouvelles	17 April 2007	126	92	0	0	0	Italy
Vindenergi Invest A/S	Greentech Energy Systems	16 February 2007	30	30	0	48	256	Germany, Norway, Italy
Levanto onshore wind farm portfolio	International Power	01 November 2007	567	286	126	24	0	Germany, France
MREC Partners LLC & Midwest Renewable Energy Proejcts LLC	Iberdrola	18 October 2006	38	111	0	0	0	USA
Perfect Wind SAS	Iberdrola	10 July 2006	52	0	10	86	500	France
European Wind Farms	Eurotrust A/S	02 July 2006	58	0	0	200	300	Europa
Airtricity Inc	GE Energy Financial Services	21 June 2006	95	125	0	0	0	USA
Babcock & Brown Eifel Uk Limited	Infigen Energy	31 January 2006	74	23	0	13	0	Germany
Generacion de Energia Sostenible SL	Fersa Energias Renovables SA	23 January 2006	5	105	0	0	0	Spain
Naturener Eolica	Iberdrola SA	09 January 2006	26	0	30	50	200	Spain
Ostwind Group (Wind Farm in Prognitz)	GW Energy	20 December 2005	25	26	0	0	0	Germany

Source: Respective homepages and M&A reports

Appendix B:
Private transaction data from the photovoltaic (solar) farm industry

Comparable PV power companies in transactions

Target	Bidder	Date	EV EURm	PV capacity (MW) Installed	Non-installed	Geography
Rete Rinnovabile S.r.l.	Terra Firma Capital Partners Fund III	Pending	620	150	0	Italy
Sun & Kim Co. Ltd.	Unitech Electronics co. Ltd.	Pending	11	4	0	South Korea
Recurrent Energy, Inc	Sharp Corporation	04 November 2010	230	12	324	USA, Canada
Montalto de Castro PV power plant	Etrion Corporation	09 August 2010	48	20	8	Italy
SunRay Italy Holding I S.r.l. + SunRay Italy Holding II S.r.l	Etrion Corporation	05 August 2010	195	32.8	0	Italy
Africana Energia SLU	Grupo Ortiz, TSK Electronica y Electricidad SA	20 July 2010	320	50	0	Spain
Nextlight Renewable Power LLC	First Solar Inc	12 July 2010	216	0	1,100	USA
First Solar GmbH	WealthCap	31 March 2010	160	53	0	Germany
SunRay Renewable Energy limited	SunPower Corporation	29 March 2010	202	37	400	Italy, France, Greece, Israel
8 MW solar farm (located in Alange)	Alten energias Renovables	15 February 2010	60	8	0	Spain
Pozohondo solar farm	Alten energias Renovables	04 February 2010	26	5.1	0	Spain
Castilla La Mancha	HgCapital Renewable Power Partners Fund	01 February 2010	14	12	8	Spain
Construcciones Esferub S.L. (19 SPV Companies)	Undisclosed	27 January 2010	9	1.8	0	Spain
Sunthrough Energy Inc.	Bergamo Acquisition	01 December 2009	55	8	0	USA
SunEdison LLC	MEMC Electronic Materials Inc.	23 November 2009	192	80	0	USA
Solar Utility S.p.A	Pirelli & C. Ambiente S.p.A	13 November 2009	16	3	7	Italy
Alcala de Gurrea solar farm	Abraxa Integrated Financial Solutions	19 October 2009	20	2	0	Spain
Almeria og Solon projects	Konstantin Strasser	02 October 2009	88	30	0	Spain
Arava Power Company	Siemens AG	28 August 2009	10	0	5	Israel, Spain
Cleantech America Inc.	Meridian Energy Limited	19 August 2009	4	0	5	USA
Belvia de Monroy solar farm	Abraxa Integrated Financial Solutions	03 August 2009	14	3	0	Spain
Solar photovoltaic plant	HgCapital Renewable Power Partners Fund	13 May 2009	35	5	0	Spain
OptiSolar Inc (Proejct Pipeline)	First Solar Inc	03 April 2009	318	0	1,800	USA
Solar photovoltaic plant	HgCapital Renewable Power Partners Fund	18 March 2009	300	35	0	Spain
Foresta Capital	Impax Group plc	29 July 2008	45	14	0	Spain
Montebalito - two solar parks	Elidecos Spain SL	29 July 2009	17	14	0	Spain
Fuentealamo 2 & 3, and Calasparra	Fotowatio SL	30 June 2008	12	0	32	Spain
Gamesa Solar S.A.	First reserve corporation	29 April 2008	307	40	50	Spain
15,2 MW solar farm (located in Alange)	Alten energias Renovables	26 February 2008	65	15	0	Spain
Alumbra Solar S.L.	Fotowatio S.L.	15 November 2007	70	11	0	Spain
Andaluzia solar SA	Martifer Renewables SGPS SA	29 June 2007	14	2	0	Spain
Bosques Solares (Cuenca photovoltaic solar Energy plant)	Private Investor group	13 December 2006	25	6	0	Spain

Source: Respective homepages and M&A reports

Appendix C:
Regression output – wind farm analysis

Summary output

Regression statistics	
Multiple R	0.968386632
R-Square	0.93777267
Adjusted R-Square	0.934057605
Standard Error	68.56704171
Observations	72

ANOVA

	df	SS	MS	F	Significance F
Regression	4	4747030.578	1186757.644	252.4243305	1.28564E-39
Residual	67	314996.427	4701.439209		
Total	**71**	**5062027.005**			

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	(26.31678894)	10.16846837	(2.58807797)	0.01182439	(46.61313652)	(6.02044135)
Installed MWs	1.63713314	0.07477595	21.89384711	0.00000000	1.48787973	1.78638655
Under construction	1.08642841	0.19225040	5.65111134	0.00000035	0.70269501	1.47016181
Late-stage pipeline	0.50846422	0.07401261	6.86996704	0.00000000	0.36073443	0.65619402
Early-stage pipeline	(0.03873021)	0.02688031	(1.44083951)	0.15428725	(0.09238353)	0.01492311

Appendix D:
Regression output – solar farm analysis

Summary output

Regression statistics	
Multiple R	0.914432084
R Square	0.836186037
Adjusted R Square	0.824888522
Standard Error	58.86547223
Observations	32

ANOVA

	df	SS	MS	F	Significance F
Regression	2	512945.5384	256472.7692	74.01504307	4.05591E-12
Residual	29	100489.1708	3465.143821		
Total	**31**	**613434.7092**			

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	14.08007695	13.37055115	1.05306631	0.30100620	(13.26577019)	41.42592408
Installed MWs	3.97590030	0.35161334	11.30759227	0.00000000	3.25677028	4.69503032
Non-installed MWs	0.17927559	0.02880984	6.22272063	0.00000087	0.12035285	0.23819832

Appendix E:
Regression output – wind farm analysis, including size effect

Summary output

Regression statistics	
Multiple R	0.970500573
R-Square	0.941871362
Adjusted R-Square	0.938400996
Standard Error	66.27044708
Observations	72

ANOVA

	df	SS	MS	F	Significance F
Regression	4	4767778.27	1191944.568	271.4040085	1.31722E-40
Residual	67	294248.7345	4391.772156		
Total	**71**	**5062027.005**			

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	(2.72823061)	12.36347645	(0.22066856)	0.82602158	(27.40583260)	21.94937139
Installed MWs	1.15850004	0.19459232	5.95347262	0.00000011	0.77009215	1.54690792
Dummy (1: Instl. > 200 MW, 0: Instl. < 200 MW)	0.50903065	0.19313332	2.63564391	0.01042453	0.12353494	0.89452636
Under construction	0.78805486	0.07737081	10.18542851	0.00000000	0.63362207	0.94248764
Late-stage pipeline	0.40002701	0.06084262	6.57478223	0.00000001	0.27858462	0.52146940

Appendix F:
Regression output – wind farm analysis, including time effect

Summary output

Regression statistics	
Multiple R	0.971206596
R-Square	0.943242252
Adjusted R-Square	0.93985373
Standard Error	65.48433248
Observations	72

ANOVA

	df	SS	MS	F	Significance F
Regression	4	4774717.752	1193679.438	278.363894	5.92982E-41
Residual	67	287309.2526	4288.1978		
Total	**71**	**5062027.005**			

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	(22.59391995)	9.49659528	(2.37916003)	0.02020797	(41.54920324)	(3.63863665)
Installed capacity	1.43960006	0.09724550	14.80377020	0.00000000	1.24549723	1.63370289
Dummy (1: Date > 30 June 2008, 0: Date < 30 June 2008)	0.35497530	0.12012252	2.95511043	0.00431029	0.11520976	0.59474085
Under construction	0.79480382	0.07567745	10.50251920	0.00000000	0.64375101	0.94585663
Late-stage pipeline	0.52597675	0.06351049	8.28172973	0.00000000	0.39920927	0.65274422

Appendix G:
Valuation summary

Summary – wind farm analysis

EURm	Early-stage pipeline	Late-stage pipeline	Under construction	Installed MWs
EV/MW multiple	0.0x	0.5x	1.1x	1.6x
Upper EV/MW multiple	0.0x	0.7x	1.5x	1.8x
Lower EV/MW multiple	0.0x	0.4x	0.7x	1.5x

Summary – solar farm analysis

EURm	Early-stage pipeline	Late-stage pipeline/under construction	Installed MWs
EV/MW multiple	0.0x	0.2x	4.0x
Upper EV/MW multiple	0.0x	0.2x	4.7x
Lower EV/MW multiple	0.0x	0.1x	3.3x

Summary – wind farm analysis including size effect

EURm	Late-stage pipeline	Under constr.	Installed MWs < 200	Installed MWs > 200
EV/MW multiple	0.4x	0.8x	1.2x	1.7x
Upper EV/MW multiple	0.5x	0.9x	1.5x	2.4x
Lower EV/MW multiple	0.3x	0.6x	0.8x	0.9x

Source: Deloitte analysis

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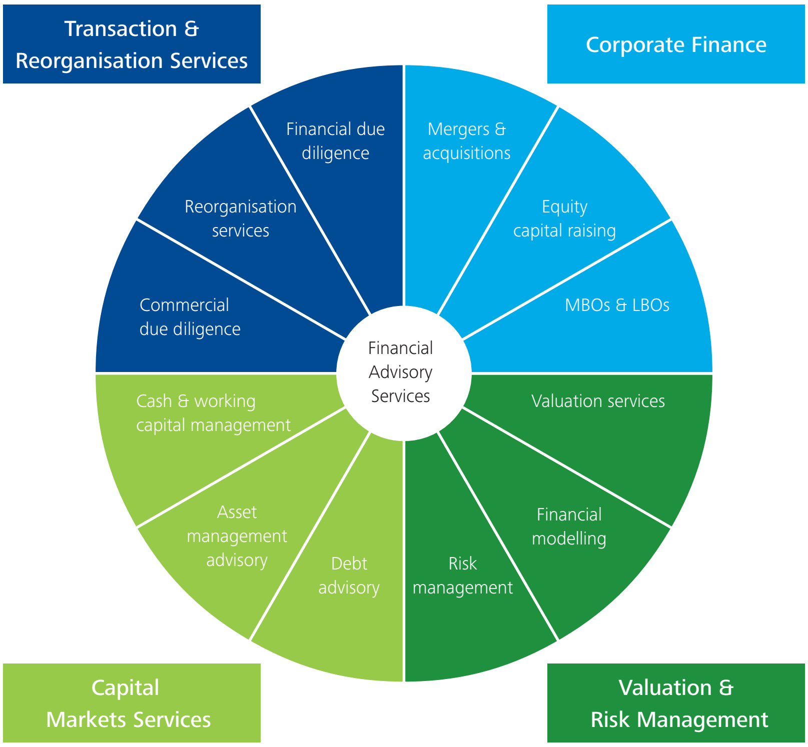

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