



New Power. New Markets. TM

Corporate PPAs

The Scandinavian Experience

Overview GEC

- Reaching back as far as the 1990s, GEC is one of the leading financial advisors to renewable energy asset developers, owners and investors
- GEC provides a full set of advisory services:
 - ✓ Capital raising and placement (equity and debt)
 - ✓ Project contract structuring and optimisation (including PPAs)
 - ✓ Capital structure optimisation
 - ✓ Financial restructuring
- With a team of 5 professionals, GEC has a hands-on approach to transactions:
 - ✓ Strong process competence: buy-side and sell-side; project assessment; data room/process preparation; modelling; valuations; competitive auctions, sourcing of PPAs, appraisal of PPAs
 - ✓ A unique combination of industry, financial and market expertise (wind and solar)
 - ✓ Well-established relationships with a broad range of capital providers for renewable energy in Europe
- GEC provides conflict-free advice and execution services independent of any capital provider
- GEC creates tangible value for its clients through its unique understanding of both the assets and the investor universe
- GEC is authorised and regulated by the Financial Conduct Authority of the UK (FRN: 583 634)

How Green Evolution Capital can Support a Transaction

- **Strong relationships with developers, service providers, investors and offtakers:**
 - Clients benefit from GEC's relationships with relevant market participants and service providers
 - GEC's understanding of investor appetite and investment criteria for renewable energy assets allows us to target the cheapest source of capital for asset owners and developers based on an asset's risk profile
 - Unmatched knowledge of the continental European and global investor base
- **Transaction experience:**
 - GEC manages transactions by determining a pool of the most suitable potential buyers all the way through to financial close
 - GEC will assist through the preparation of information memoranda, deal models, data-rooms etc.
 - Clients benefit from GEC's ability to design and manage an efficient transaction process with multiple parties: investors, their advisors, lawyers, banks, appraisers, offtakers, etc.
- **Sector knowledge:**
 - GEC has a unique focus exclusively on the renewable energy space. We know the major market participants and stakeholders in this field, the technologies, the government support schemes and the issues investors and offtakers will concentrate on

Principles

The following principles are essential to everything we do:

- **Client First:** GEC only provides independent and conflict-free advice with the highest standards of integrity
- **Excellence:** The markets and the needs of our clients are constantly evolving, and we therefore, customise solutions in every client engagement and keep the highest standards of excellence in everything we do
- **Long Term:** GEC aims to build secure and long-lasting partnerships with clients and investor groups by becoming their trusted advisor

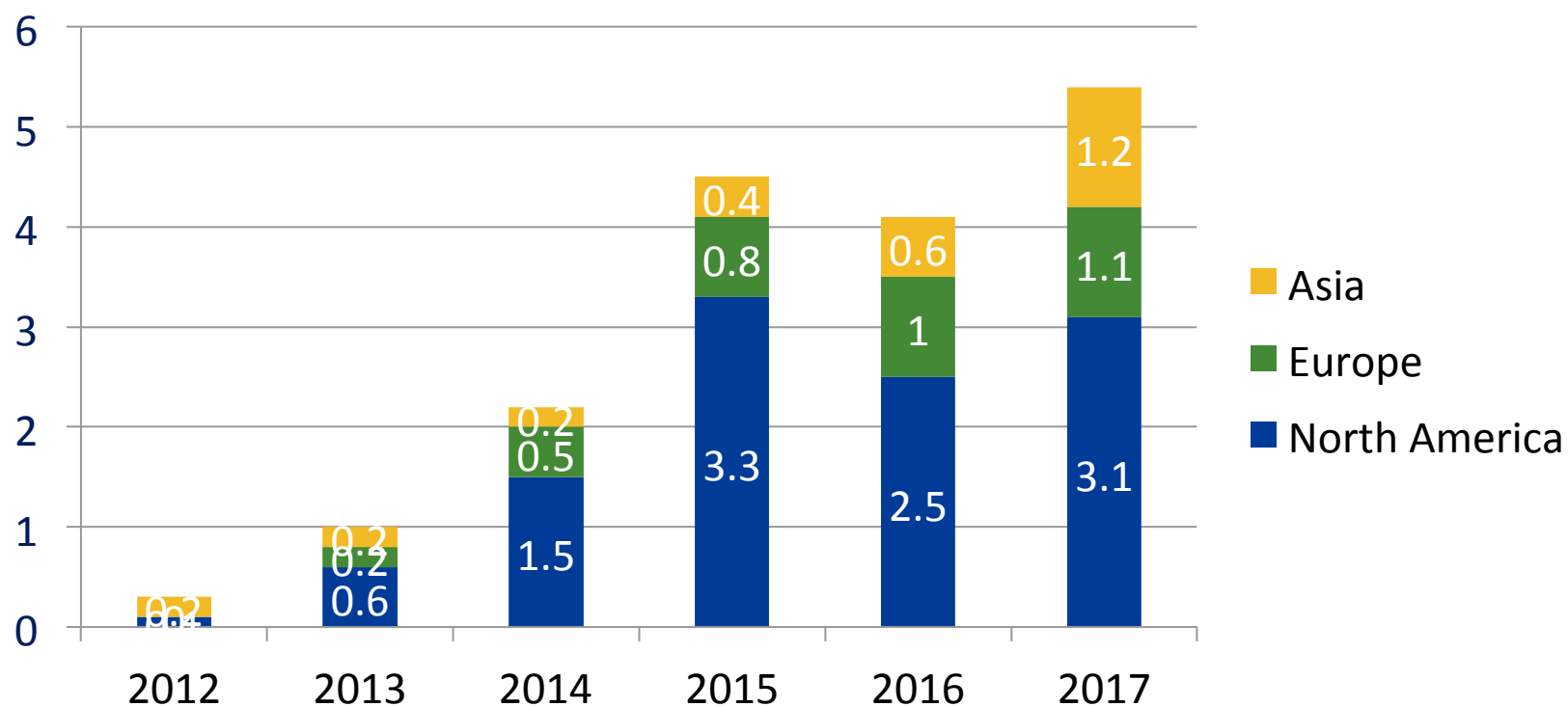
Corporate PPAs



The PPA Market

Corporate PPA volumes, by Region

Annual volume (GW)



- For comparison, the new installed capacity in wind in the European Union was 15 GW in 2017; and the total installed capacity at the end of 2017 was approximately 168 GW.

Source: Bloomberg, GEC, EurObserv'ER 2018

The PPA Market

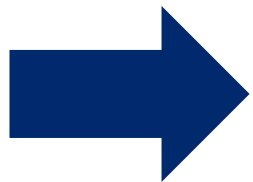
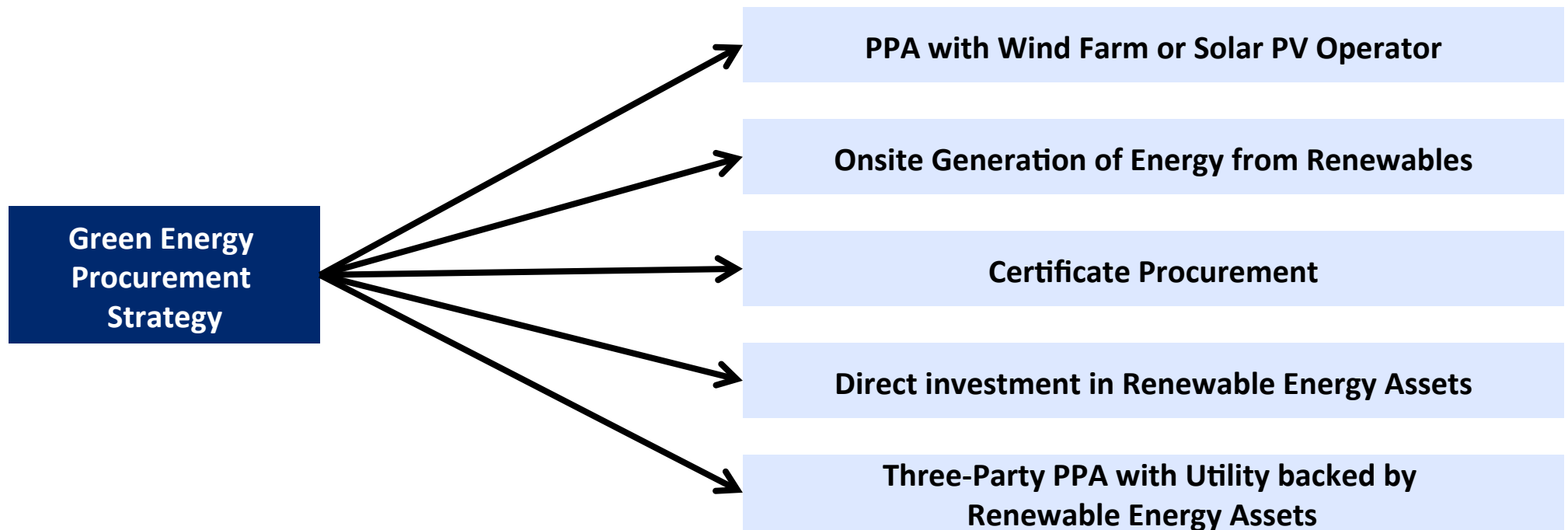
Main Counterparties:

- Datacentre / IT companies that procure large amounts of energy all over the world
 - Google, Apple, Facebook, Microsoft, etc.
- Aluminium smelters / metals companies for who energy constitutes a large portion of the bottom line
 - Alcoa, Norsk Hydro, etc.
- Consumer products companies to whom public relations related aspects are especially important
 - Nestlé, Procter & Gamble, Anheuser Busch, Kimberley Clark etc.

Recent Major Transactions in the European PPA Market

Financial Close	Name	Country	Developer	Technology	Size	PPA
Oct-18	Don Rodrigo	Spain	BayWa	Solar PV	174 MWp	Statkraft 15 years
Sep-18	Lakiakangas	Finland	CPC Germania	Vestas	50 MW	Google 10 years
Sep-18	Hedet	Finland	Prokon	18 turbines	81 MW	Google 10 years
Sep-18	Kannus Kuuronkallio	Finland	wpd	to be announced	60 MW	Google 10 years
Sep-18	Kraktorpet	Sweden	Eolus Vind	43 Vestas 3.8MW turbines	163 MW	Vattenfall 15 years
Sep-18	Murcia solar projects	Spain	X-Elio	Solar PV	50 MW	Nexus Energia 14 years, floating price
Aug-18	Nunez de Balboa PV	Spain	Iberdrola	Solar PV	391 MWp	Kutxabank 10 years
Jul-18	Överturingen	Sweden	SCA Energy	Siemens Gamesa	235 MW	Norsk Hydro 29 years, fixed volume
Jul-18	Tonstad	Norway	Engie	to be announced	208 MW	Norsk Hydro 25 years
Jul-18	Navarra wind farms	Spain	Enhol Group	27 turbines	90 MW	Factorenergia 20 years
Jul-18	Kriegers Flak Offshore	Denmark	Vattenfall	Siemens Gamesa	600 MW	Novo Nordisk and Novozymes
Jun-18	Guleslettene	Norway	Zephyr	47 Vestas V136	197.4 MW	Alcoa 15 years with GIEK guarantee
Jun-18	Blakliden / Fäbodberget	Sweden	Vattenfall	84 Vestas turbines	353 MW	Norsk Hydro 20 years 60%
May-18	Bjerkreim	Norway	Norsk Vind Energi	70 x 4.2 MW	294 MW	Facebook PPA / Vattenfall balancing; 15 years
Mar-18	Solar PV portfolio Spain/Portugal	Spain/Portugal	Cox Energy	Solar PV	660 MWp	Audax Energia
Dec-17	Valhalla	Sweden	OX2	85 Vestas V136	357 MW	Not disclosed ("long-term PPA with 'high-calibre' offtaker")
Dec-17	Lehtirova	Sweden	OX2	41 V126 3.6 MW	148 MW	Google
Dec-17	Orrberget	Sweden	OX2	9 Nordex N117	33 MW	Not disclosed
Nov-17	North Pole (Markbygden)	Sweden	Svevind	GE turbines	650 MW	NorskHydro 19 years
Oct-17	Nordlicht	Norway	NVK	Siemens Gamesa	281.4MW	Alcoa 15 years with GIEK guarantee
Sep-17	Aliden and Brattmyrliden projects	Sweden	Eon Wind Sweden	31 N131/3900	115.2 MW	No PPA at Financial Close
Jul-17	Hennoy and Okla	Norway	Vestavind Kraft; Svelgen Kraft	Not Disclosed	70 MW	Not disclosed
Jul-17	Hogas and Joarknatten	Norway	Scanergy	15 Vestas	54 MW 193 GWh	Not disclosed
Jul-17	Askalen	Sweden	HgCapital/Vasa Vind	Vestas	288 MW	DNB
Jun-17	Grimsas	Sweden	Element Power; Krafto	13 Siemens	46.8 MW	12.5 year PPA with NEAS
Nov-16	Nygardsfjellet, Anstadblaheia, Sorfjord	Norway	Nordkraft	Siemens Gamesa	170 MW 460GWh	Unhedged / sold to Fortum
Oct-16	NordEnergie Swedish & German Portfolio	Sweden	NordEnergie Renewables	Vestas, Enercon, Nordex	146 MW	Not disclosed
Oct-16	Lehtirova	Sweden	OX2	41 Vestas V126	148 MW	Google

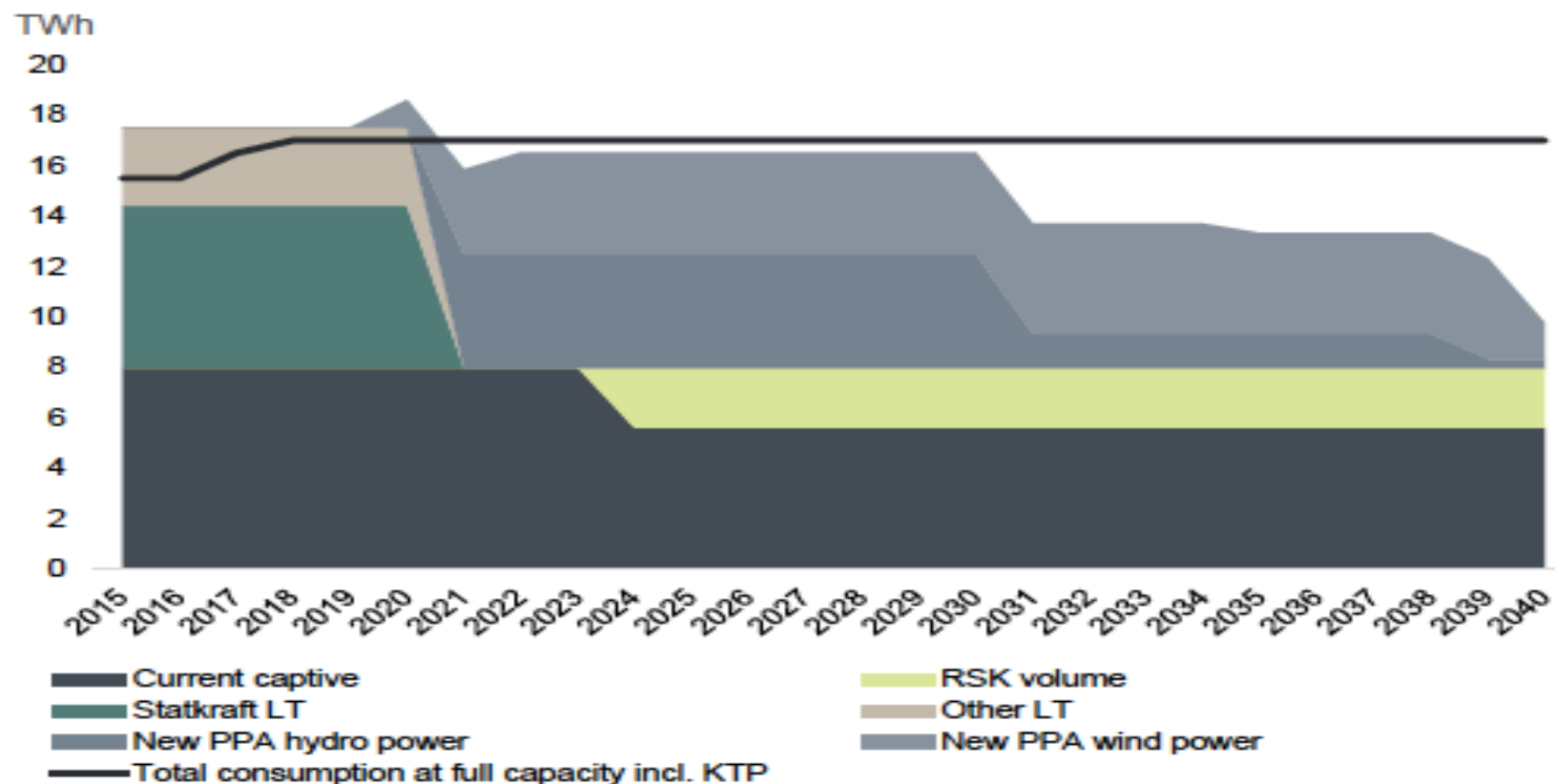
The Perspective of the Corporate



- Corporates have a number of ways of achieving green electricity procurements. Corporate PPAs are just one of them.
- Every renewable energy asset, every corporate situation and every jurisdiction will be different and require a different solution.

Case Study: Norsk Hydro

Sourcing platform for fully-owned smelters, Norway¹⁾



1) Net 8 TWh captive assumed available for smelters

2) Albras and Slovalco on 100% basis

Graph does not include power contracts entered into in Q2 2018

Commercial Aspects of a PPA

Key	Comments
Additionality	<ul style="list-style-type: none"> • Corporate offtakers generally prefer to enter into PPAs in relation to a renewable energy asset that can be presented as having been built thanks to the PPA • The implication is that PPAs can only be entered into with respect to construction-ready wind or solar PV farms • However this is not a precise definition and different approaches do exist
Purchased Product	<ul style="list-style-type: none"> • All or part of the energy produced by a wind farm with or without environmental attributes, like Guarantees of Origin, Elcerts, etc.
Main Risks that need to be allocated and transferred	<ul style="list-style-type: none"> • Price Risk • Volume Risk (incl. balancing risk): <ul style="list-style-type: none"> - over-production as well as under-production vs P50 - profile risk • Correlation between Price Risk and Volume Risk ("Cannibalization") • Negative pricing risk

Pricing of PPAs

- Prices tend to reflect
 - The lack of long-term PPA capacity, and
 - The risk of oversupply of wind in the long run,never mind the price curves of market forecasters that generally point to increasing prices (oil/coal cycles)
- “Baseload” PPAs are usually priced a few Euros higher compared to “Pay-as-produced” PPAs
- Seasonal profile will affect both the price (+) as well as the risk profile (-) of a PPA
- Prices will vary according to the price region
 - They will for example be higher in Finland compared to Sweden
- Pricing generally seen close to or below forward wholesale prices

The Perspective of the Investor – Main Structural Considerations in Designing a PPA

Key Structuring Aspect	Typical Value	Comments
Tenor of a PPA	8 – 15 years	<ul style="list-style-type: none"> • Drives loan tenor • Longer tenor preferred by investor/lenders; shorter tenor preferred by offtaker
Profile of volume sold	Baseload or “Pay-as-Produced”	<ul style="list-style-type: none"> • Pay-as-produced preferable for investor / banks • Baseload preferable to offtaker
Hedging structure	Fixed price or Caps & Floors	<ul style="list-style-type: none"> • Fixed price is the norm in Scandinavia • Structures with floating prices above a floor have been observed in Spain
Quantum of power hedged	60 – 80%	<ul style="list-style-type: none"> • Upper limit driven by the fact that a project will require an open position to (partially) absorb volume variations • Open position provides upside in case of power price increases • Lower limit driven by project finance requirements
Balancing responsibility towards TSO and additional services	Producer or Offtaker	<ul style="list-style-type: none"> • Will generally be allocated to offtaker who will reflect the cost in the offtake price • Will then generally be outsourced by offtaker to a specialized third party (e.g. utility or energy trader)

Key Differences Between Utility PPAs and Corporate PPAs

Utility PPAs

- Volume sweet spot of between 30-70 MW, with tenors of up to 10 years
- Process driven by wind farm owner / investor who negotiates with utility on a bilateral basis
- Utility generally bundles PPA offtake with additional energy market-related services such as assuming the balance responsibility towards TSO, GoO handling, ElCert marketing, reporting, regulatory filings

Corporate PPAs

- Volumes tend to be larger (100 MW+), with tenors that may exceed 15 years
- Corporates tend to have higher leverage against wind farm owner / investor due to shortage of supply of corporate PPAs, especially for long maturities
- Additional services, such as those provided by utilities need to be bought separately. This may complicate the legal structure

Key trends in PPA sourcing

- PPA auctions
 - Google's European PPA sourced via auction with several stages, over several months, in several European countries and using a detailed questionnaire (on-going process)
 - Most US PPAs are awarded after auction
- Green Energy purchasing consortium
 - Example: AkzoNobel Specialty Chemicals, DSM, Google and Philips signed PPAs with the Krammer (102 MW) and Bouwdokken wind farms (29.4 MW) in the Netherlands in October 2016 and January 2017
- New entrants as PPA offtakers. Examples include:
 - Kutxa Bank (Spain) with Iberdrola Solar PV Project for 391 MW
 - Novo Nordisk with Kriegers Flak Offshore Project for 600 MW

Case Study: Project Nordlicht (Kvitfjell/Raudfjell)

Overview

- 281.4 MW wind farm located near Tromsø, Norway with 67 Siemens Gamesa SWT 4.2 MW turbines
- Gross energy yield: 971 MWh (39.4% load factor)
- Transaction sponsored and managed by Prime Capital AG with a consortium of two investors who came in at construction-ready status: German pension fund (66%), turbine manufacturer (33%) and GEC as financial advisors to the deal
- Financial Close in September 2017

PPA

- Corporate PPA with Alcoa for a period of 15 years from COD which is 2 years after Financial Close (i.e. approx. 17 years in total)
- Pay-as-Produced structure
- 100% of production sold to Alcoa, with 70% sold for a fixed price and 30% for a floating price as per Nord Pool
- ECA-guarantee from GIEK (a Norwegian Government entity) to achieve a bankable rating

Financing

- All of the debt provided by DekaBank of Germany, combining KfW- and commercial tranches (sculpted) to optimise debt sizing and cost of debt
- 17.75 year overall tenor, slightly above the PPA tenor
- Debt sizing using different DSCR ratios for hedged/unhedged power and elcert volume and combining different price scenarios
- Debt resizing mechanism based on actual achieved price level through elcert hedging
- Flexible debt structure accommodating various earn-out and deferred payments

Conclusions

- Corporate PPAs will become more widespread, both in existing PPA markets and in new markets
 - Depending on renewable energy auctions, this will also include mature markets such as Germany in the medium/long-term, and other industry sectors
- The overall corporate PPA market volume is limited due to the limited scope of industry sectors that have the right requirements
 - Utilities are the natural competitor to corporate PPAs, and they are adapting their product offering to respond to the corporate PPA challenge
- Corporate (and utility) PPAs will be a significant industry driver for renewable energy going forward
- The main lesson from Project Kvitfjell / Raudfjell in Norway is that transactions of this nature require bigger and more specialized teams. Those teams and workstreams need to work seamlessly together. Investors will require longer exclusivity periods

Conclusions

For more information:

Yves Schaus

Partner

Tel: +44 7979 963 595

yschaus@greenevolutioncapital.com

Kim Christian Köhler

Partner

Tel: +44 7715 210 370

kkoehler@greenevolutioncapital.com

London Office:

116 Pall Mall

London SW1Y 5EA

United Kingdom

www.greenevolutioncapital.com

Disclaimer

This presentation and the information contained in it (the “**Presentation**”) relate to a yet to be established investment vehicle (the “**HoldCo**”). It is being issued in the United Kingdom by Green Evolution Capital LLP (“**GEC**”). GEC is authorised and regulated by the Financial Conduct Authority of the United Kingdom (“**FCA**”) under FRN 583 634.

The distribution of this Presentation in other jurisdictions may be restricted by law and persons who request or agree to receive this Presentation are required to inform themselves of, and to comply with, any such restrictions. The Presentation is not to be made available to any person in any jurisdiction where doing so would contravene any applicable laws or regulations. By requesting or agreeing to receive this Presentation, the recipient confirms that it is aware of the laws in its own jurisdiction relating to the receipt of information relating to investments, and the recipient warrants and represents that it will not pass on or utilise the information contained in this presentation in a manner that could constitute a breach of such laws by GEC or any other person.

Recipients of this Presentation who intend to apply for an investment in interests in HoldCo are reminded that any such application may be made solely on the basis of the information and opinions contained in the HoldCo offering and subscription documentation, which may be different from the information and opinions contained in this Presentation. Prospective investors should seek appropriate advice in relation to any applicable legal requirements and tax regulations in the country of their domicile or residence that might be relevant to the subscription, purchase, holding, exchange, redemption, disposal or taxation of any investments.

This Presentation together with the information and opinions contained herein are for background purposes only, do not purport to be full or complete and are not intended to constitute, and should not be construed as, investment advice, arranging deals in investments or making arrangements with a view to transactions in investments. Potential investors in HoldCo should seek their own independent financial and tax advice. The recipient is not GEC’s client, GEC neither provides investment advice to, nor receives and transmits orders from investors in HoldCo described or referred to in this Presentation nor does it carry on any other activities with or for such investors that constitute “MiFID “ or equivalent third country business” for the purposes of the FCA Rules.

This Presentation does not constitute or form part of any offer to issue or sell, or any solicitation of any offer to subscribe or purchase, any investment, nor shall it or the fact of its distribution or communication form the basis of, or be relied on in connection with, any contract therefor. Applications for an investment in HoldCo can only be made at the relevant time on the basis of the offering documentation available. Any person subscribing for an investment in HoldCo must be able to bear the risks involved and must meet the suitability requirements relating to such an investment. Some or all alternative investment programmes may not be suitable for certain investors.

Information included in this Presentation is provided for discussion purposes only and may be subject to amendment. Certain information included in this Presentation is based on information obtained from sources considered by GEC to be reliable. However, any projections or analyses provided to assist the recipient of this Presentation in evaluating the matters described herein may be based on subjective assessments and assumptions and may use one among alternative methodologies that produce different results. Accordingly, any projections or analyses should not be viewed as factual and should not be relied upon as an accurate prediction of future results. No representation is being made that any investment will or is likely to achieve profits or losses similar to those shown. No reliance may be placed for any purpose on the information and opinions contained in this Presentation or their accuracy or completeness. No representation, warranty or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained in this Presentation by GEC, its members, officers or employees, or the Fund, and no liability is accepted by such persons for the accuracy or completeness of any such information or opinions. GEC does not disclaim or exclude or restrict any duty or liability that it has under the regulatory system in the United Kingdom.

No representation is being made by the inclusion of any investment examples and strategies presented herein that HoldCo will achieve performance similar to such investment examples and strategies or avoid losses. There can be no assurance that any investment examples and specific strategies described herein will meet their objectives generally, or avoid losses. Past performance is not necessarily a reliable indicator of future results. An investment in HoldCo involves a significant degree of risk. Potential investors must familiarise themselves with HoldCo’s offering documentation and must meet certain eligibility requirements in order to make such investment and must be able to fully absorb the risks associated with such investment.

The material contained in this Presentation is based upon proprietary information and is provided purely for reference and as such is confidential and intended for private use only. The text and statistical data or any portion thereof contained in this Presentation may not be stored published, rewritten for broadcast or publication or redistributed in any form except with the express written permission of GEC.

GEC will not be liable for any inaccuracies, errors or omissions in the Presentation or in the transmission or delivery of all or any part thereof or for any damage arising from any reliance on the Presentation by the recipient or any third-party.