

29 November 2020

## Initiation of Coverage

## Doral Group Renewable Energy Resources Ltd.: Doral operates in Photovoltaics, Wind, Biogas, Natural gas, and energy storage and in several countries; we start our coverage with a target price of 18.3 NIS

Stock Exchange: TASE

Symbol: DORL

Sector: Technology

Sub-sector: Cleantech

Stock Price Target: NIS  
18.3

Closing Price: 14.65 NIS

Market Cap: 2,108  
million NIS# of Shares: 143.9  
millionAverage Daily Trading  
Volume: 6,081 StocksStock Performance  
(since June 2020):  
96.9%Dr. Tiran Rothman –  
Lead AnalystEquity.Research@frost.com  
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### Highlights

Doral Renewable Energy Resources Group is renewable energy and environmental infrastructure developer, acting in Israel and globally, operating since 2007. The Company operates in a variety of renewable energy fields: Photovoltaics, energy storage, Environmental Infrastructures including bio-gas, Wind and Natural gas. Doral initiates, develops, builds and operates energy projects -Solar ground base, rooftops and water reservoirs, waste disposal facilities and infrastructures, wind energy, and power generation via natural gas facilities.

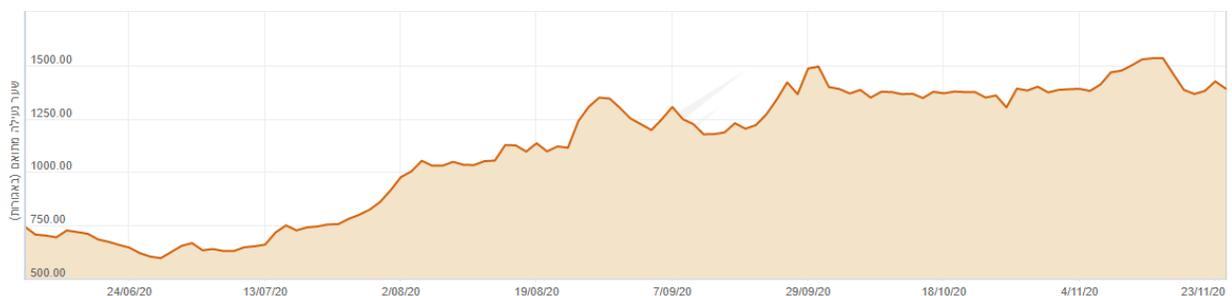
**Market and trends** - In the wind energy market, Frost & Sullivan forecasts that around 900 GW of new capacity will be added between 2020 and 2030. The annual investment will vary from \$140 to \$160 billion. In the PV market, Frost & Sullivan forecasts that around 1,500 GW of new capacity will be added between 2020 and 2030, accounting for a total investment of \$1.5 trillion. We believe that the wind and PV market will continue to grow based on global demand and governmental plans.

**Strategy** - Doral targets Israel, the USA, and Europe as its main markets for the foreseeable future. It has the experience, the capital and knowledge to promote its projects; however, the test will be in converting pipeline projects due in 1-5 years to grid connected facilities. Thus, in our economic model we used probabilities to quantify this conversion.

Specifically, the company's strategy is to select and operate in markets that demonstrate a combination of factors, with specific emphasis on supportive policy, regulations, favorable market conditions, an opportunity to optimize technology and increase installed capacity. In international markets, the company partners with local entities that have competitive advantages at the initial and early stages of development.

**Valuation** - Our valuation encompasses 34 identified clusters of projects. We calculated NPV for each project based on the probability of the projects and holdings %. Furthermore, we calculated other assets and liabilities the company has, as we elaborated in our report. Based on all parameters, we evaluate the company's equity value at NIS 2.64 billion. This valuation excludes additional, unidentified, projects in the company's pipeline, which may have additional upside; **price target ranges between NIS 17.3 to NIS 19.4 and on average NIS 18.3**. We also used market benchmark such as EV/EBITDA for the 2021 renewable energy sector. Market benchmark is 17.5 while Doral EV/EBITDA is 17.3. Following is our forecast for Doral's revenues and EBITDA for the years 2021-2023 and share price since IPO (TASE data):

Year	Revenues (000 NIS)	EBITDA (000 NIS)
2021E	168,369	137,182
2022E	379,493	303,547
2023E	1,089,527	880,674



## Executive Summary

### Investment Thesis

Globally, the renewable energy sector is in growth momentum in most countries as a result of government decisions and organizations to reduce dependence on polluting fuels and reduce greenhouse gas emissions, which are reflected in governments' actions to meet renewable energy targets they are committed to according to the Paris 2015 agreement.

The implementation of government decisions translates into policies, regulations, and licensing processes of companies that build renewable energy electricity generating facilities that are supposed to provide electricity over many years in a reliable, safe and economical manner.

Doral is well respected in its industry, both locally and globally. Their reputation extends across the Renewable Energy value and supply chains, as well as within their specific business ecosystem. The company has successful experience across all steps and stages of renewable energy projects, including initiation, development, financing, construction, management, operation, ownership, and sale of assets.

**The company aims to continue creating value by leveraging its significant land reserves and proven expertise in working with landlords, in Israel and internationally. The company's strategy is to select and operate in markets that demonstrate a combination of factors with specific emphasis on; supportive policy, regulations, favorable natural resources, an opportunity to optimize the development, and market size that supports future growth. In international markets the company partners with local entities that provide advantages in the initial early stages of development.**

#### **Doral's value proposition to investors, partners, and suppliers include:**

- Experience in evaluating projects and uncovering upside opportunities.
- Focus on markets that are mature or maturing in terms of renewable energy policy and regulation, and such markets where renewable energy sources provide competitive electricity prices without the need for subsidies.
- Identify opportunities to optimize projects' capacity or timetables immediately and/or in the long term and high likelihood to secure financing due to corporate reputation and industry relations.
- Leveraging experience to generate margins from optimization, development, and construction.

**We forecast that by 2021 Doral's projects' (representing 100% holdings) will generate revenues of NIS 168 million in 2021 and by 2022 revenues be more than double, NIS 379 million**

## Valuation Summary

Doral has approximately 525MW Capacity of PV projects - 75MW commercially operated and approx. 450MW currently under construction or projects declared as tender winners; all of them are in Israel. To date, Doral has disclosed information about 34 clusters of projects totaling approximately 3,829 MW. These projects are in various stages of development or operations, in three countries (Israel, Italy, and USA) and in mainly the fields of Solar PV, Wind, or Energy storage. To calculate the company's value, we evaluated each project's NPV using the following procedure and parameters:

- Calculated the revenues generated by each project based on:
  - Its electricity production capacity.
  - The number of operating years.
  - Electricity contract price per MW.
  - Hours of electricity production based on similar projects and information received from the company's management.
  - Initiation fees derived from project budget (only for non-operating projects).
  - Employ PV degradation of the solar panel in an annual decrease of 0.4%.
  - Add extended operating years (over the contract period) assuming much lower electricity prices, based on the ministry of energy appreciation.
- Assigned financing expenses for each project.
- Subtracted operating expenses per project, based on data from the company and our estimations.
- Applied straight depreciation model for each project.
- Added tax rates for each project based on its legal structure.
- Implemented different success rates for the projects based on stages of operation and financial closing.
- Calculated NPV per project for Doral, based on the % of holdings by the company in the project (all cost and revenues were allocated based on % of holdings).
- We add Doral's WACC of 5.29% (see Appendix B).

We assume revenues from PV and Wind will dramatically increase over the coming years as the company will engage in additional large projects, especially in Italy and the USA. For example, we forecast that Doral revenues in 2021 will be NIS 168M (representing 100% of holdings) whereas nearly all revenues are PV project-based.

However, we assume that by 2024 total revenues will total NIS 1,309 million, whereas 85% from PV, 10% from Wind, 5% from natural gas and bio gas.

## Pipeline Valuation

To date, Doral has disclosed information about 34 clusters of projects, some of them are large-scale, and some encompassing numerous standalone projects with medium to low power range; totaling approximately 3,829 MW. These projects are in operations or various stages of development, in three countries (Israel, Italy and USA) and in main areas of renewable energy – mostly Solar PV, Wind and Energy storage. Below is the full scope of Doral's identified and disclosed projects based on information received from the company and based on our analysis:

#	Groups of projects	NPV	MW	Holdings
1	Israel - PV	840,125	1,373.9	51%
2	Israel - Wind, Biogas, Natural gas	109,283	44.62	63%
3	Italy - PV	358,132	447.2	80%
4	USA - PV and Wind	883,382	1,964.0	50%
<b>Total</b>		<b>2,190,923</b>	<b>3,829</b>	

<sup>1</sup>NPV calculation is based on: a) considering company holdings; b) probability parameters.

Based on the above parameters, we evaluate the company's pipeline at NIS 2.19 billion.

## Equity Value

We evaluated Doral equity value based on 34 clusters of projects within the pipeline the company has identified and disclosed and that we have analyzed. To the sum of the different projects NPV, we added management fees that the company is entitled to receive. Furthermore, the company is also entitled to receive an initiation fee in any project that completes the financial closing. We also consider G&A expenses as reported in the company financial reports with a 2% annual increase as the company will need to support its progress.

The company's share in cash was NIS 341.5 million on 30 September 2020 with unallocated loans and bonds (i.e., not related to a specific project) of NIS 114.7 million and carry forward taxes of NIS 44 million. We added these as non-operational assets/liabilities.

Below is our equity value breakdown:

<b>Total Pipeline</b>	<b>2,190,923</b>
<b>Income from management &amp; Initiation fees</b>	364,655
<b>G&amp;A allocated expenses</b>	(187,453)
<b>EV</b>	<b>2,368,125</b>
<b>Total non-operating</b>	<b>270,910</b>
<b>Equity Value</b>	<b>2,639,036</b>

Based on the above parameters, we evaluate the company's equity value at NIS 2.6 billion. This valuation encompasses an identified project totaling 3,829 MW. Thus, we do not include additional unidentified projects, which may have an upside potential.

### Sensitivity Analysis

The table below presents Doral price target concerning the capitalization rate. We set a range of 0.5% change from our WACC model (see Appendix B). The company has 143.9M shares as of 23 November 2020.

Cap. rate	Price target (NIS)
5.79%	17.3
5.29%	18.3
4.79%	19.4

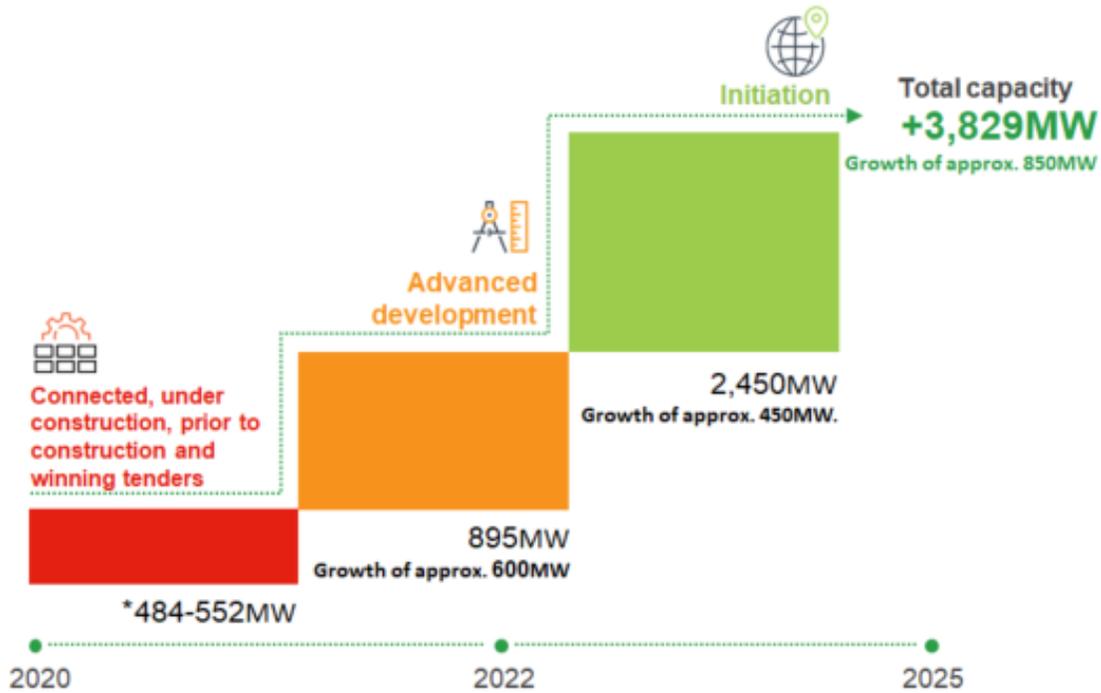
We estimate the price target to be range between NIS 17.3 and NIS 19.4; a mean of NIS 18.3.

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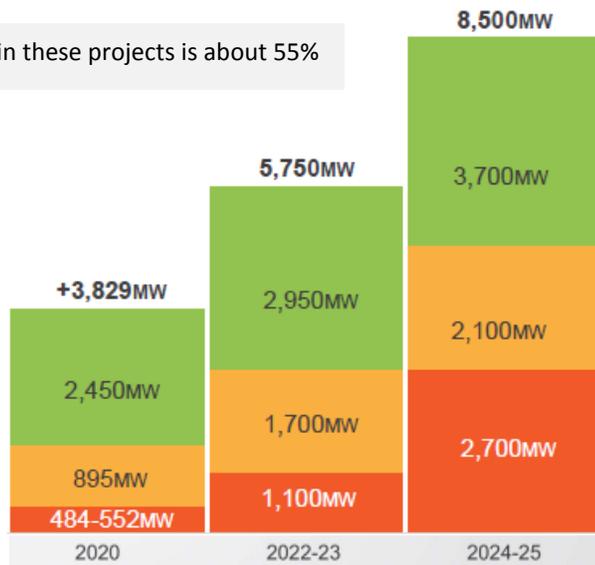
## Company Overview

Doral Renewable Energy Resources Group (TASE:DORL) initiates, develops, builds and operates renewable energy projects across Israel, the US and Italy. The company's vision is to implement their renewable energy projects on a global scale. In the US and Italy the company has 2,411 MW worth of energy projects currently in planning phases and has a goal of reaching an 8500 MW total portfolio of projects from planning to implementation by 2025. Doral believes in the implementation of cutting-edge technologies and has different areas of activity of renewable energy including the combination of solar energy and energy storage. Doral is the biggest winner of the first Israeli Solar + storage tender; will install approximately 500MW of storage capacity.



\*\*The company's weighted share in these projects is about 55%

- Initiation
- Advanced Development
- Connected / Construction



The Company has four main divisions of activity:

- 1) The Israel Division where solar energy predominates the energy portfolio.
- 2) The US Division where joint ventures are expected to increase the Company's renewables portfolio substantially.
- 3) The European Division where joint ventures in Italy are expected to increase the Company's renewables portfolio substantially.
- 4) The Division which includes: Environmental Infrastructure Projects in the fields of Bio Gas, Waste and Wastewater Management, Wind Energy in Israel, and Cogeneration.

To support these divisions Doral's strategic strengths include: 1) A well-seasoned team with vast experience and professional knowledge 2) The ability to navigate regulatory requirements and authorities 3) Close work with first-class manufacturers of advanced technology equipment 4) Established relations with financing banks and Institutional Investors 5) Partnership agreements with the majority of kibbutzim throughout Israel, for the establishment of energy production systems.

All of these strengths have allowed Doral to come to the table and offer truly competitive value that has led to long lasting partnerships.

### **Israel Activity**

In 2008, Doral was the first company to connect a solar photovoltaic system to the national electricity grid in Israel. As of today, Doral owns and operates hundreds of operational Solar PV systems in Israel, ground mounted, rooftops and reservoir PV facilities. With the connection of the solar facilities that are currently under construction and the solar facilities that won the tenders, the supplier of the facilities owned by the company will be approx. 484-552 MW. The Company has established PV systems on a variety of scales from large infrastructure projects to small systems designed for self-consumption. The company is a market leader in storage activities and engaged in technologically advanced projects combining solar energy with energy storage capacity.

## Energy Storage

### Doral leads in the field of energy storage to meet government goals

#### Solar + Storage

Doral is **the largest winner** in an energy storage tender in Israel; will establish about **500 MW** storage facilities.



#### Storage in the consumption location

Doral sets up energy storage facilities and manages electricity networks in the consumer yard.



#### Storage facilities in the transmission network

The company is preparing for tenders on behalf of the Electricity Authority concerning storage facilities that connect to the transmission network.



### Tenders Won by Doral (MWp)



Two major Israeli projects that Doral is currently preparing for construction are, significant tender for solar fields that will include energy storage and Hadarei She'an.

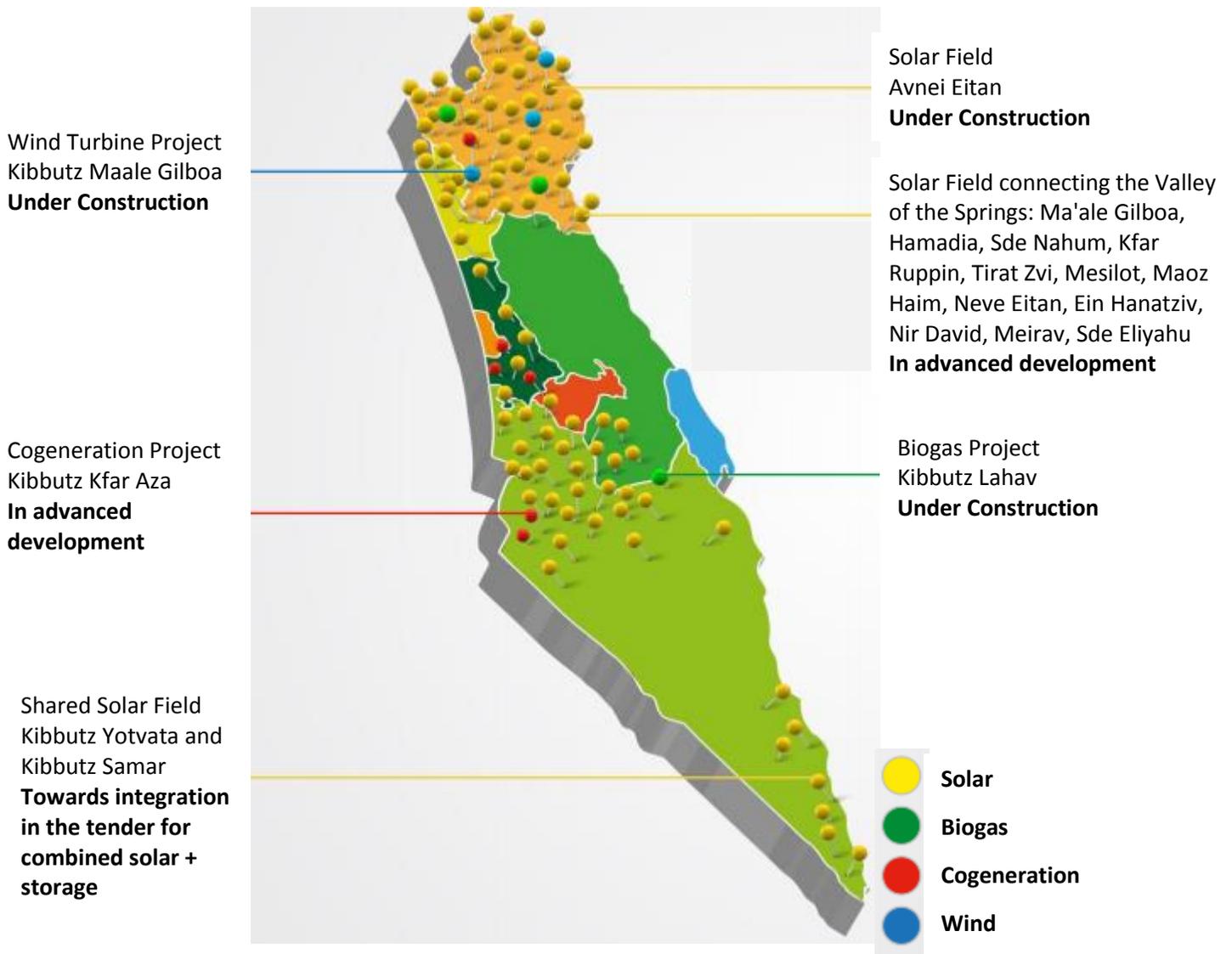
**Hadarei She'an** - One of the biggest (200 mega-watts) PV power stations in the Middle-East located in the Beit She'an Valley.

Doral has a partnership agreement with Invenergy LLC one of the largest privately held power producer in the United States and 11 kibbutzim from Beit She'an Valley. The project represents an investment of 537 million NIS, is projected to produce revenues of

55 million NIS per year, and expected to be commercially operational in 2023/24. Doral owns 32.5% of this project.

**Energy Storage Tender** – Doral is a major player in the Israeli energy storage market and has won 100 MW of PV and 500MW of storage capacity out of the 168 MW tender presented by the electricity authority. The projects are projected to bring in between 73.5-97 million NIS, has a total capacity of 202-270 MWp, an EBITDA of 56.4-79.3 million NIS and FFO of 44-64.7 million NIS. Doral owns ~58% approximate and chained (weighted average) of these projects.

**Map of Doral’s Projects in Israel (including a few detailed examples)**



**US Activity**

In order to achieve its goals of international presence, Doral signed on a term sheet with Clean Air Generation LLC regarding the establishment of a joint venture, which will operate through Global Energy Generation (GEG). GEG will manage the initiation, development, construction, maintenance and operation of energy production projects in the US. The agreement stipulates that the Global Group will be jointly managed by the aforementioned parties; the owner of Clean Air Generation LLC will be entrusted with the management of the Global Group's day-to-day operations, in accordance with the parties' guidelines.

### **This joint venture secured Doral 4 major US projects:**

- 1) A project for the construction of a solar field in the state of Indiana, with a capacity of about 1,300 megawatts (1.3 gigawatt) at an expected establishment cost of \$1.3B and NTP expected in 2021- 2022



Mammoth Solar

Capacity: 1GW | Status: under development | Expected NTP: 2022 | Expected COD: 2023 | Total Investment: 1.3 Billion Dollar



- 2) A project to establish wind turbine farms in the state of Pennsylvania, with the capacity of about 175 to 200 megawatts, at an expected establishment cost of \$300M and NTP expected in 2021
- 3) A project for the construction of a solar field in the state of Pennsylvania, with the capacity of about 200 megawatts at an expected establishment cost of \$250M and NTP expected in 2021
- 4) A project to build a solar field in Delaware, with a volume of about 110 megawatts at an expected establishment cost of \$150M and NTP expected in 2023

## European Activity - Italy

Doral founded a joint venture to further expand its activity into Italy. Doral entered into a cooperation agreement with a third party regarding the initiation, development, and establishment of renewable energy systems at a capacity of approx.450 megawatts at an expected establishment cost of 450M\$ and RTB expected in 2022-2023. One of the main projects under this cooperation is a 120 MW solar project in southern Italy.



Mazzarino, Southern Italy

Capacity: 120MW | Status: Under development | Expected RTB: 2021 Accumulated | Accumulated Investment: 100 Million EU



## Renewable Energy Activity

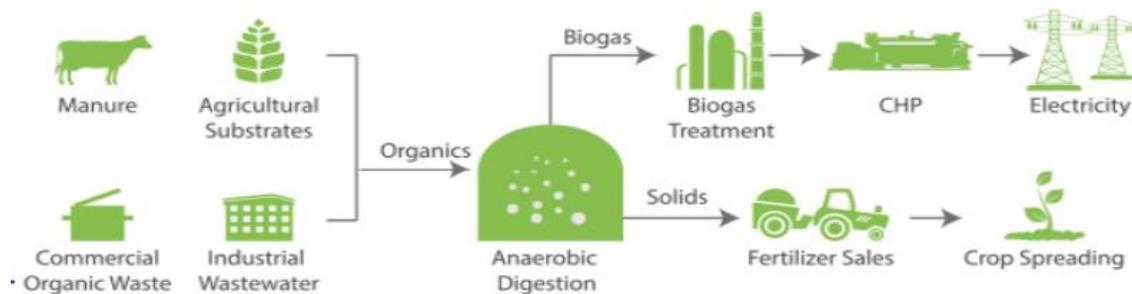
Because Doral is a future oriented company, it has spread its reach far beyond just the traditional solar and wind renewable solutions. Below are its additional branches of activity:

- 1) **Energy Storage** - The energy storage industry is one of the fastest growing market segments in the renewables ecosystem. Energy storage solutions are expected to integrate naturally into renewable energy power generation systems, thereby enabling renewable energy production facilities to be similar in terms of availability, to conventional production facilities.

The Company's activities to realize the storage potential contain 3 main areas:

- Renewable energy facilities including storage.
- "Behind the meter" storage facilities.
- Frequency regulation facilities.

- 2) **Environmental Infrastructure (waste and wastewater management)** - The increasing global population along with the growth of the global economy has drastically increased waste production, particularly solid and organic waste. The need for end-point waste treatment solutions is on an upward trend and represents serious market potential. Doral has initiated “Waste to Energy” projects such as bio-gas anaerobic digestion facilities for organic waste treatment and power generation. Currently Doral is developing multiple bio-gas projects along with domain leaders totaling 10MW and representing an investment of 150M ILS.



- Recently, Doral completed an investment in Paulee Cleantech, a privately owned, start-up company aimed at international markets (Brazil, USA, and more), which developed a revolutionary technology that converts any organic disposal into qualified fertilizers in a short and quick process at the production site without the need for mobilizing the organic waste and the fertilizers. The product is a mineral organic fertilizer with no odor, environmentally friendly and is approved as fertilizer to enrich a variety of agricultural crops. The company is in advanced development stages of several unique applications with a proven competitive edge in relevant markets, each with significant revenue potential.
- 3) **Natural Gas** - In 2019, Doral Renewable Energy Group founded “Taya Doral” in partnership with Taya. Taya-Doral Energy initiates, funds, builds and holds natural gas based small power plants thus enabling significant savings for its customers. These power centers are co-generation power facilities through which Taya-Doral provides its clients with cost-effective thermal energy based power. Sources of this power derive from: steam, hot water, cold water and CO2 pending on the customer’s needs. Taya-Doral has recently won the first of its kind tender issued by the local Electricity Authority to build several small power plants at total capacity of 13 MW.

**Below we will introduce the global renewables market in detail and focus heavily on wind and solar energy because the lion’s share of Doral’s activities is within these domains. We will further specifically detail the US market and give a comprehensive overview of the Israeli renewables ecosystem in order to give readers a solid understanding of Doral’s landscape.**

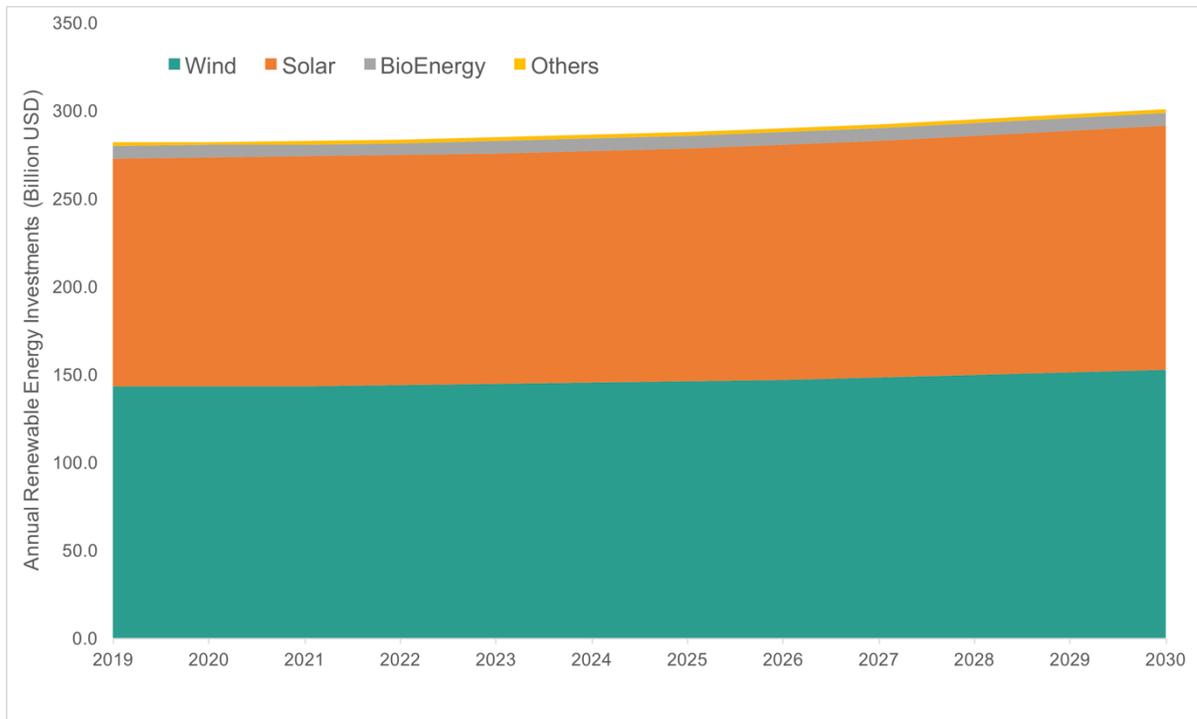
## Global Renewable Market Introduction

Historically, global power generation was dominated by centralized energy sources such as coal, nuclear, oil, and large hydropower plants. These plants were usually state-owned, and the electricity generated would be transmitted across the country via a centralized grid. There was a minimal competition within the market, and the environmental impact was hardly considered. This situation has gradually changed over the past two decades, mainly driven by market decentralization and favorable regulatory frameworks (which boosted competition), concerns over the impact of climate change, and supportive renewable incentive programs.

Driven by the transformation across the energy sector, renewable energy sources (RES), primarily wind energy and solar energy, have become well established low-carbon energy sources to meet global energy demand because of their widespread availability, cost-effective nature, and flexibility compared to other RES. An increase in the adoption of wind and solar energy technologies would significantly mitigate and alleviate issues associated with energy security, climate change, unemployment, etc. and help in reducing global CO2 emissions by more than 50% between now and 2050.

The impact of the renewable revolution has been felt in many global markets, but European nations and the US have been at the forefront, later joined by China. Although the incentives schemes for renewable energy in many markets have gradually become less generous, this has largely been offset by consistent declines in renewable energy technology and project costs, construction and service innovation, and the continuation of favorable regulatory frameworks that ensure renewables have priority access to the grid. Once a wind or solar plant is online it is basic common sense anyway to ensure that the power generated is given priority, as the fuel cost is zero.

Wind power and solar PV dominate global renewable investment (large hydropower, which is still a significant technology in a number of markets, is not considered truly renewable because of the potential environmental damage to the river networks). Global investments in renewable energies accounted for \$282 billion in 2019, with wind and solar energies accounting for ~97% of non-hydro renewable investment in 2019. A total of ~\$3 trillion is forecast to be invested across the next decade in renewable energy sources, with annual renewable energy investment exceeding ~\$300 billion in 2030. Further cost reductions mean that both technologies will reach grid parity (a situation where it is as cheap to build a solar plant as it is a coal plant) in an increasing number of markets over the coming decade, further supporting the business case for investing in renewables.



**Figure: Annual Global Investments in Renewable Energies (Billion USD)**

## Renewable Incentive Schemes – How the Market Works

### Price-Driven Mechanisms

Renewable energy project developers or owners receive financial support in terms of a subsidy per kW of capacity installed, or a payment per kWh of electricity produced and sold to the utilities. The major strategies are:

- *Investment-focused strategies*: financial support is given by investment subsidies, soft loans or tax credits (usually per unit of generating capacity);
- *Generation-based strategies*: financial support is a fixed regulated feed-in tariff (FIT) or a feed-in-premium that a utility is legally obligated to pay for renewable electricity from eligible generators. In-terms of FITs, the total feed-in price is fixed, whereas the feed-in-premium amount is independent or dependent on the electricity market price. In case of feed-in-premium, developers enjoy high prices when electricity market prices increase, but also could risk getting reduced prices when market prices are low.

## Quantity-Driven Mechanisms

Renewable Portfolio Systems (RPS) is defined by the government, which sets a quota or the percentage of RES generation or market penetration. The most important points are:

- *Tendering or bidding systems*: Tenders are launched for a certain generation capacity. Competition between bidders results in contract winners that receive a guaranteed tariff for a specified period of time.
- *Tradable certificate systems*: Also known in Europe as Tradable Green Certificate (TCG) systems and in the US and Japan as renewable portfolio standards (RPS), the generators (producers), wholesalers, distribution companies or retailers are obliged to supply or purchase a certain percentage of electricity from RES. This can be done using:
  - Utilizing electricity from their own renewable electricity generation farm;
  - Purchase renewable electricity and associated certificates from another generator; and/or
  - Purchasing certificates without purchasing the actual power from a generator or broker

The price of the certificates is determined, in principle, according to the energy market in respective countries.

**Table: Support Mechanisms for Renewable Energy Sources**

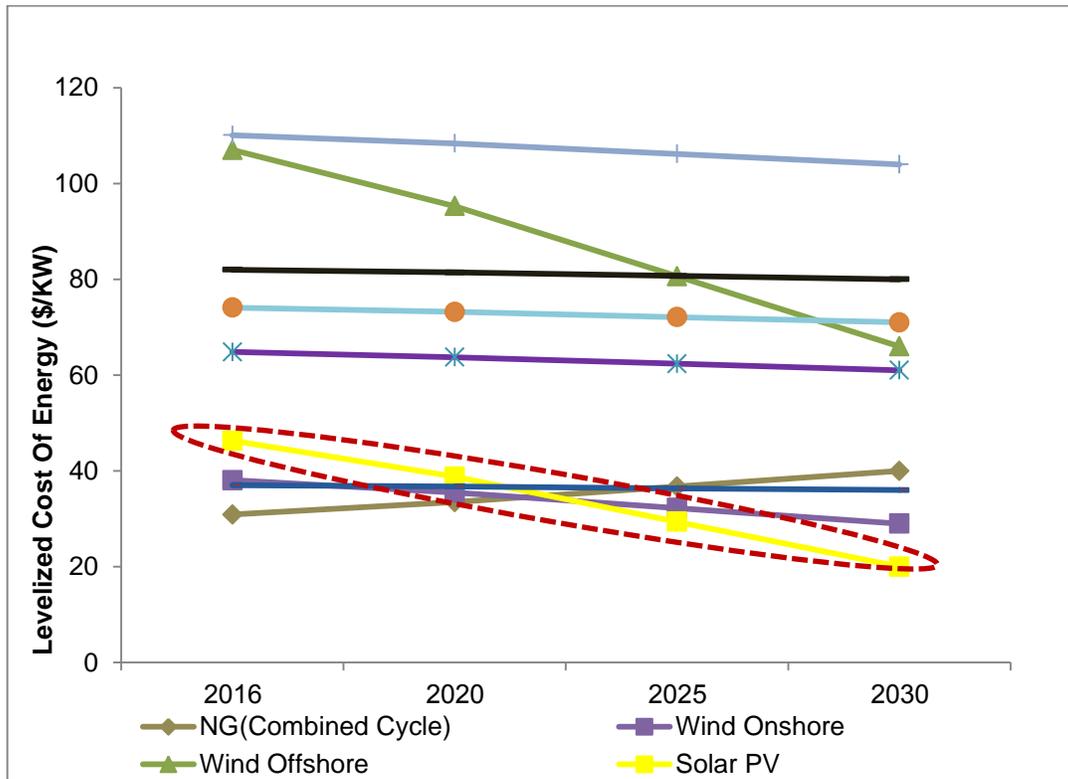
	Price-driven Mechanism	Quantity-driven Mechanism
<b>Investment Focused</b>	Investment incentives	Tendering system for investment grant
	Tax credits	
	Low interest /Soft loans	Tendering system for long-term contracts
<b>Generation based</b>	(Fixed) Feed-in tariffs	Tradable Green Certificate system
	Fixed premium system	

## Key Renewable Energy Market Trends

### Continued Decline in Wind and Solar Technology and Project Costs

The decline in renewable energy project costs started around 2010, with solar PV leading the way. Solar module costs have declined by around 82% across the course of the decade (modules account between 35% and 45% of total project costs). Wind technology cost declines started later, but have also been substantial – the global average price per MW for an onshore wind has declined by 39% and offshore wind by 29% between 2010 and 2019.

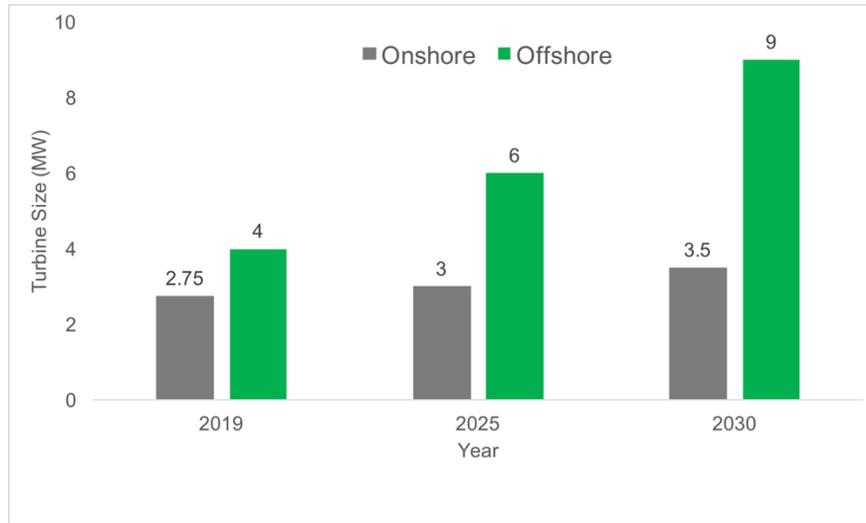
Continued cost reductions are forecast for both wind and solar, through a combination of lower core technology costs (larger turbines and taller hub heights are a significant factor for wind projects); a reduction in total project costs (greater efficiencies in construction and commissioning), and lower servicing costs.



### Larger and Larger Turbines

For wind projects, the average total size of wind projects is generally increasing, but the most significant factor is turbine size. In recent years, the average size of wind turbines has been increasing. These larger size turbines with increased hub heights can better

react to wind speeds, resulting in higher efficiency rates and increased power generation, making the overall wind project more competitive.

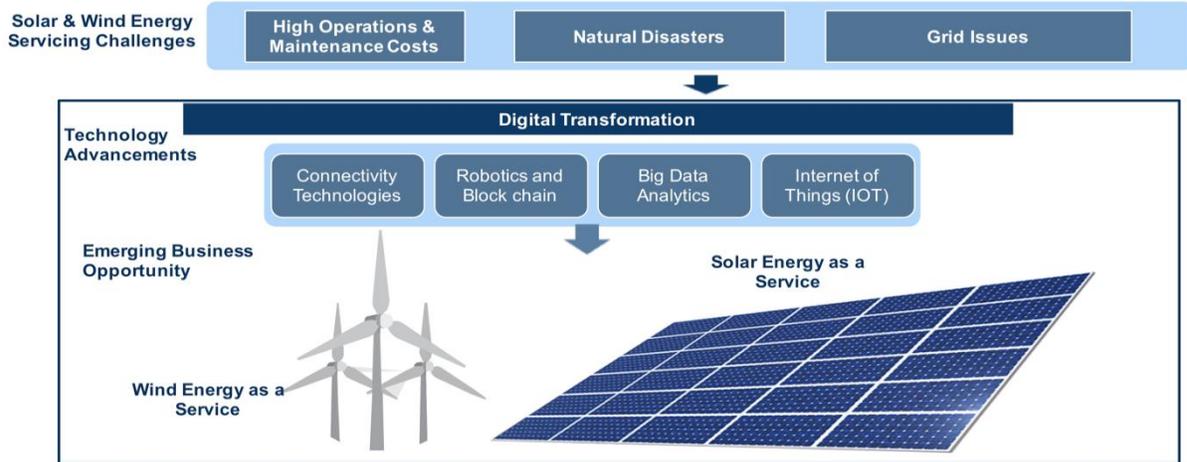


**Figure: Average Wind Turbine Sizes, 2019 – 2030**

### **Service Innovation & Increase in Digitalization**

As the global renewables market continues to grow and mature, the industry is increasingly shifting from a product focused to a service focused business model. The global renewables market is currently witnessing an increasing scale of digitization that will offer substantial opportunities for digital technologies such as big data and analytics, artificial intelligence (AI), blockchain, drones, robotics and the internet of things (IoT). These technologies will enable reductions in the costs associated with operations & maintenance and reduce expensive downtimes.

Wind servicing has become increasingly competitive, as OEMs face competition from independent service providers, component sub-suppliers looking to expand their service operations, and also wind farm operators looking to take on more of the servicing responsibility themselves as their knowledge consistently increases. The impact of all of this has been OEMs acquiring successful ISPs, and greater collaboration between wind OEMs and developers, who are increasingly keen to work in partnership as opposed to simply being the customer.



### Renewables + Energy Storage Systems

Energy storage systems (ESS) are emerging as one of the key solutions to efficiently integrate the increasing percentage of RES coming into the electricity grid. Wind and solar are intermittent energy sources, meaning that when there is minimal wind or sun they generate low amounts of electricity and equally on very sunny and windy days, output is high. This has led to the curtailment of wind and solar farms from the grid – essentially disconnecting the farms from the grid and wasting any electricity produced. Storage solves this problem, as the electricity generated is stored when it is not needed and can then be fed into the grid when it is. This also helps to stabilize the electricity grid and prevent outages. Whether the electricity is supplied to meet peak demand or stabilize the grid, the impact is the same – additional revenue streams for operators.

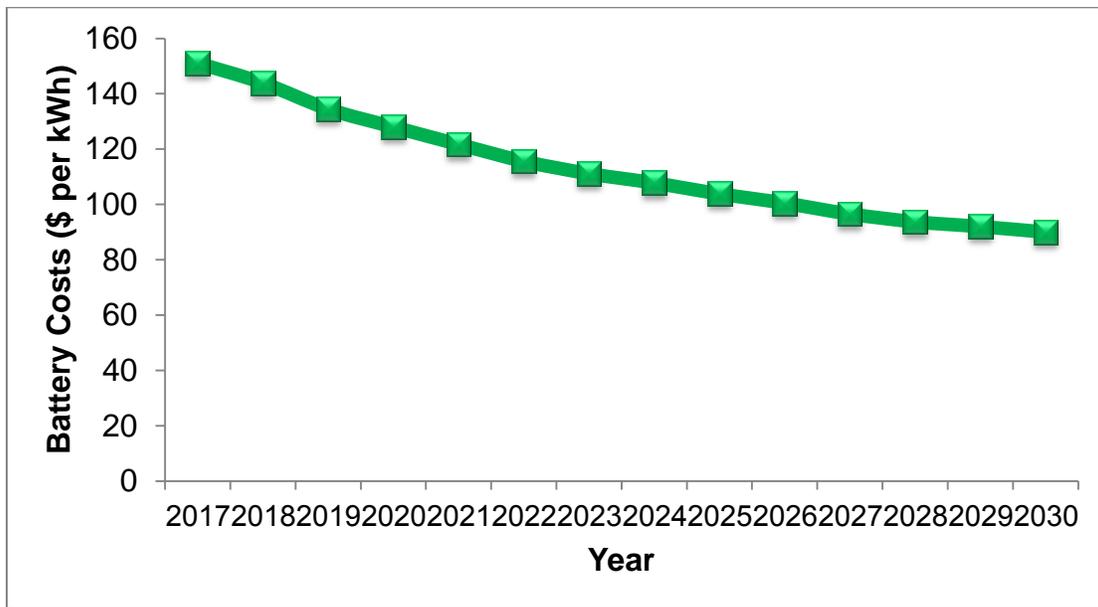
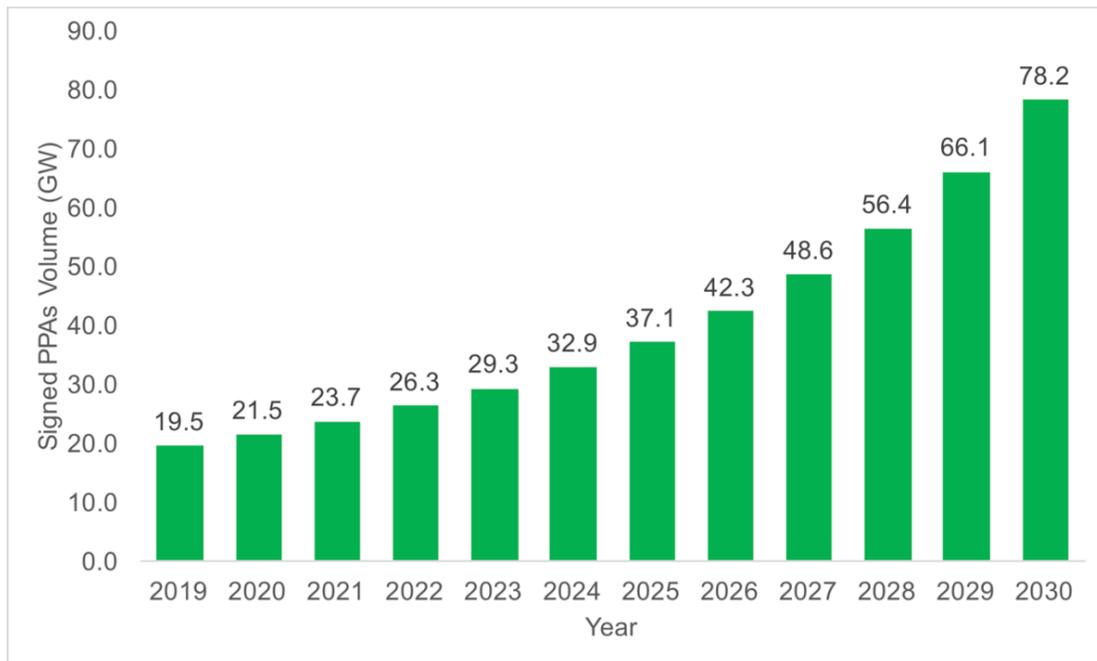
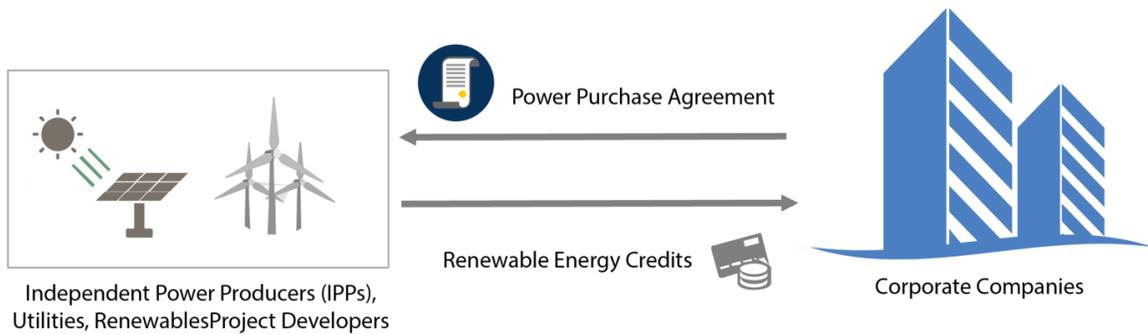


Figure: Average Battery ESS Costs (\$ Per kWh), 2017 – 2030

## Strong Growth in Corporate PPA's

As the costs of renewable energy continue to decline, major Fortune 500 companies, large retailers, data centers, manufacturers, and even government facilities have started utilizing electricity generated from RES to meet their renewable energy goals. These companies utilize PPAs to reduce their environmental footprint and energy costs and offset their energy consumption and lock in future energy costs. Renewable energy developers need the contracted revenue and revenue stability to finance and build new projects. PPAs provide both long-term cost certainty and improved price visibility; mitigating volatility and electricity price risk can help organizations reduce carbon intensity, increase supply chain sustainability and accomplish renewable energy targets.



**Figure: Renewables PPAs Volume Growth (GW), 2019 – 2030**

## Key Market Drivers & Restraints

**Table: Key Market Drivers and Restraints, 2020 – 2030**

Drivers	1–2 Years	3–4 Years	5–9 Years
Growing concern for tackling global climate change	H	H	H
Declining wind & solar generation costs and project costs to accelerate new deployments	H	H	M
Declining battery ESS costs	H	M	M
Need to replace ageing power plants	M	M	M
Increasing digitization across the renewable energy market	L	H	H

Restraints	1–2 Years	3–4 Years	5–9 Years
Need to tackle grid integration issues	H	M	M
Withdrawal of government subsidies and support could lower growth rates	H	M	M
Changing weather patterns may have an adverse impact on wind energy and solar energy	L	L	M

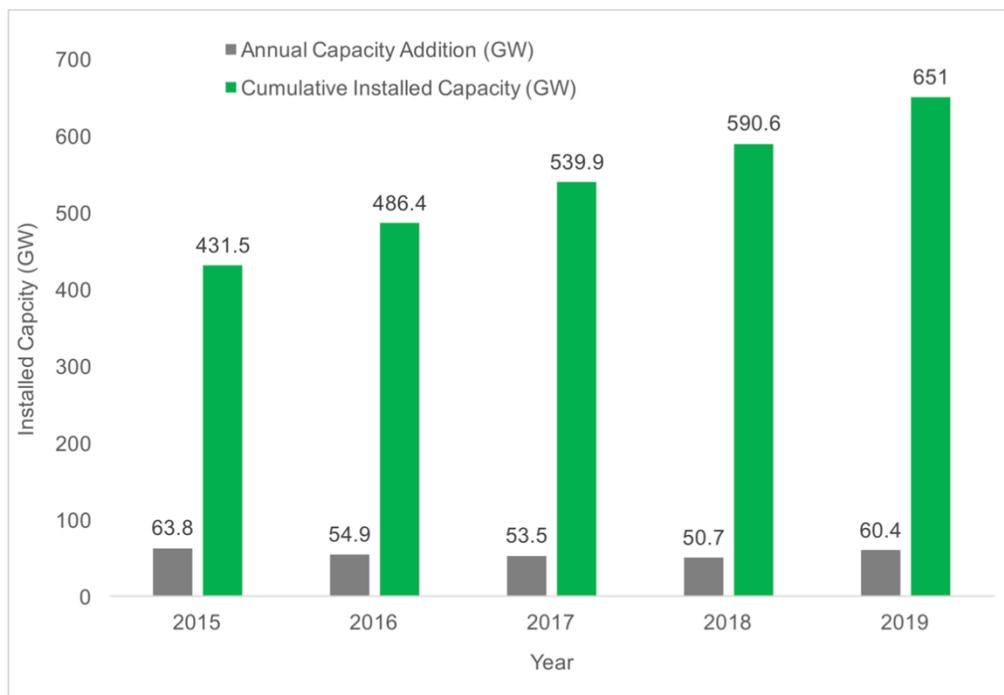
**Impact Ratings: H = High, M = Medium, L = Low**

**Please see appendix C for more details on the renewable energy market structure.**

## Global Wind Energy Market

### Introduction

The global cumulative installed wind-generation capacity (onshore and offshore) has increased by a factor of almost 75 in the past two decades, jumping from 7.5 gigawatts (GW) in 1997 to 651 GW in 2019, with 60.4GW installed in 2019. Annual wind investment in 2019 was \$143 billion, a 7.5% increase on 2018, despite per MW reductions in project costs. Nearly all countries now have regulatory frameworks and support mechanisms in place – with varying degrees of ambition, scope and comprehensiveness – to push their wind energy agenda.



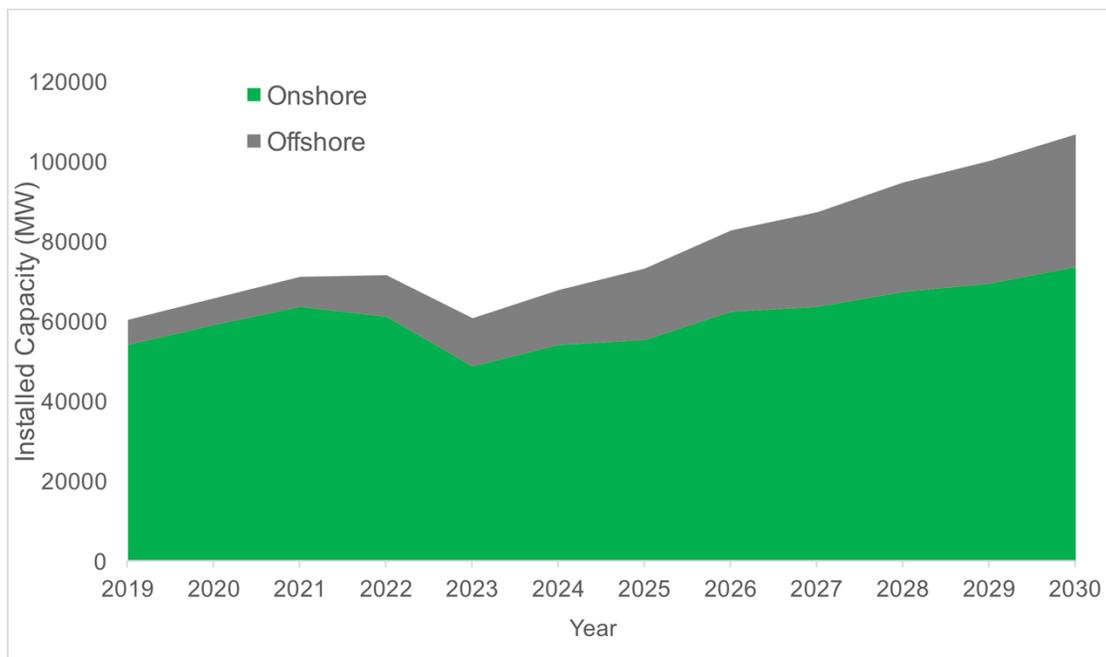
**Figure: Annual Installed Capacity (GW) and Cumulative Installed Wind Capacity (GW) from 2015-2019.**

The world's top five markets in 2019 for new installations were China, the US, the United Kingdom, India and Spain – those five markets together made up 70% of global wind capacity installations. In terms of cumulative installed capacity, the top five markets as of the end of 2019 are China, the US, Germany, India and Spain, which combined account for 72% of the world's total wind capacity installation. Out of the 60.4GW installed, 54.2GW was onshore with 6 GW offshore. Offshore installations were concentrated in Europe and China.

## Global Wind Energy Market Outlook

The market outlook for the global wind industry is forecast to continue to be strong. Frost & Sullivan forecasts that around ~ 900 GW of new capacity will be added between 2020 and 2030, averaging 80 GW per year. Based on the forecast, the cumulative global wind energy capacity is expected to reach ~1,530 GW by 2030, 85% of which will be onshore and 15% offshore. Annual investment will vary between \$140 billion and \$160 billion.

Growth in the early part of the decade is forecast to be driven principally by the US and China, as both rush to meet incentive expiry deadlines. Elsewhere, market-based mechanisms including the wind-only, hybrid, technology-neutral auctions will continue to dominate.



**Figure: Forecast of Annual Wind Capacity Additions (GW) between 2019 and 2030.**

Europe has an enormous onshore wind potential, with many sites still awaiting development. With a lot of conventional power plants reaching the end of their lifetime, we can expect the development in onshore wind power to strengthen Europe's energy security. The European onshore market is expected to remain stable with annual installations between 12-13 GW until 2030, with Spain, France and Germany key markets. Onshore annual installations could increase if governments develop clear and ambitious National and Energy and Climate Goals and resolve issues related to land and environmental impacts.

Onshore wind energy met around 12.2% of total EU electricity demand with an estimated total of 417 TWh of wind generated electricity. Many European countries are currently upgrading their transmission grid systems to efficiently integrate the increasing share of electricity generation from renewables, primarily wind energy. Increasing interconnections between the Western and Eastern Europe will help these countries to meet their power demand and will also boost onshore wind deployments across East European countries as well. Between 2020 and 2030 100GW of onshore installations are forecast to come online and cumulative capacity will reach 285GW. Israel is actively looking to expand its wind portfolio in its northern region and \$72 million approved has been approved by the Ministry of Defense (MOD).

Other key global regional markets include China with average annual installations of 29.5GW, Asia Pacific with average annual installations of 11.6GW, Latin America, with annual average installations of 5.6GW, Africa and the Middle East with average annual installations of 2.4GW until 2030.

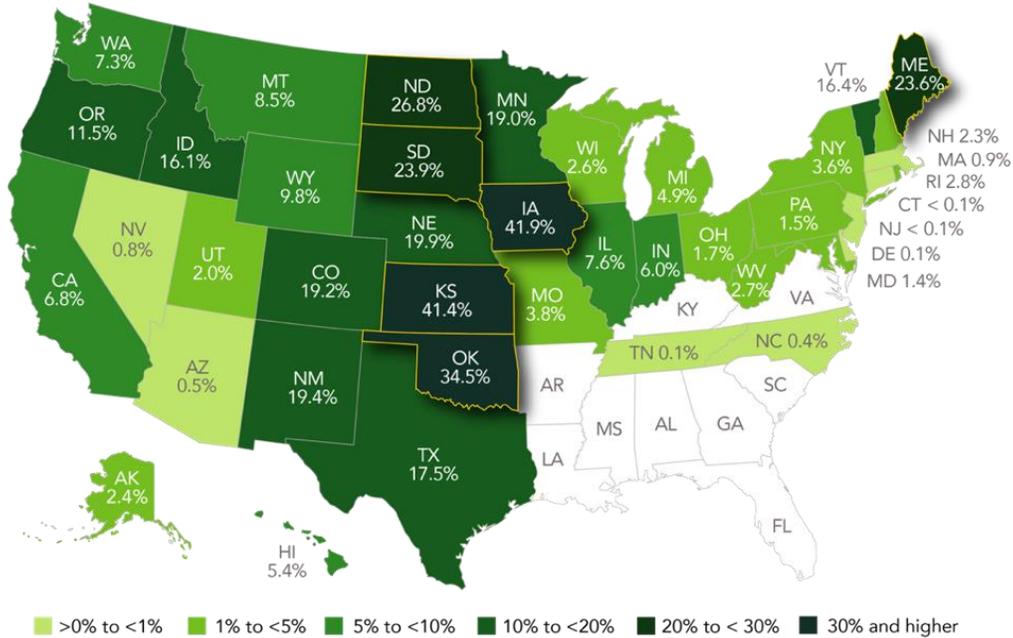
## **US Wind Energy Market**

### **Introduction**

The US is the second largest market in the world. The country's wind capacity has quadrupled since 2008 and as of 2019 wind energy is the largest source of renewable energy generating capacity, accounting for 7.2% of total generation. Across the country, wind power accounted for 30% of utility-scale power capacity additions over the past 10 years.

The US wind industry had a strong year in 2019 with new wind projects totaling 9.1 GW came online with an estimated investment of nearly \$14 billion. These new capacity additions made wind power the number one choice for new utility-scale power generation in 2019, capturing 39% of new additions. Currently, the cumulative wind installed capacity stands at 105.6 GW with nearly 60,000 wind turbines now operating across 41 states and two territories.

Currently, the US wind energy market generates enough electricity to meet the demands of California and New Jersey combined. At a state level, wind energy provides over 20% of the electricity produced in 6 states - Iowa, Kansas, Maine, North Dakota, Oklahoma, and South Dakota. In Iowa and Kansas, wind is now the single largest source of electricity generation. Both states generated over 40% of their electricity from wind power last year.



**Figure: Percentage share of Electricity Generated from Wind Energy Across Different States in the US. Source: IEA**

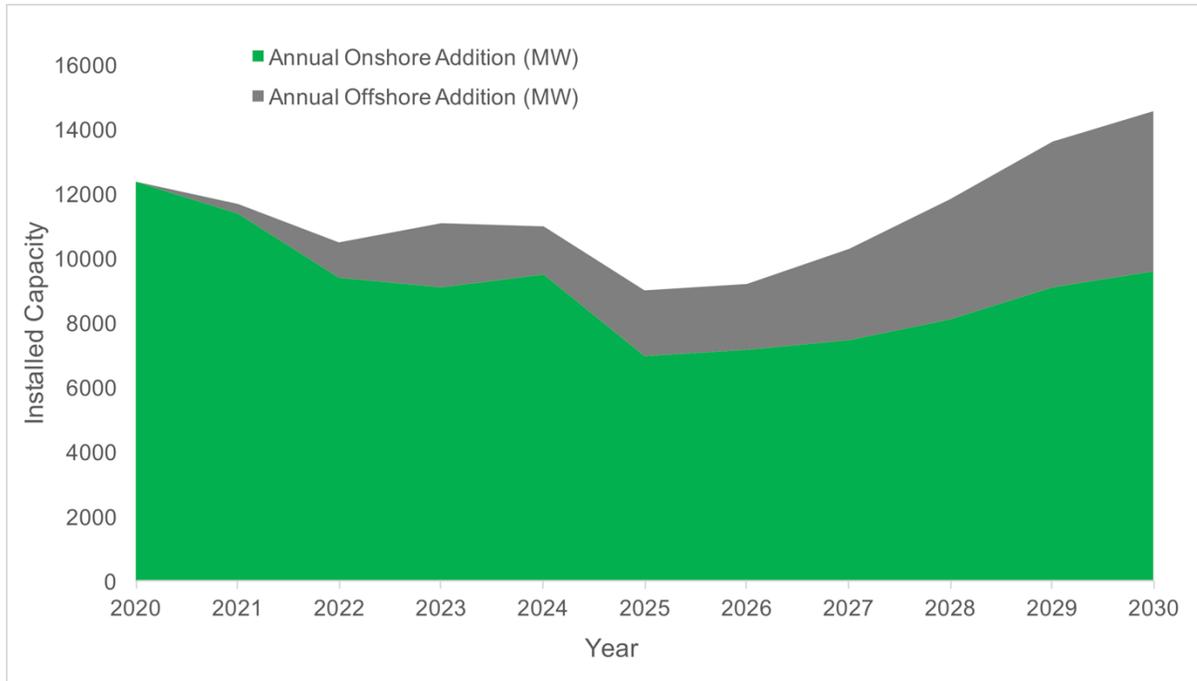
**Please, see appendix D for information concerning Incentive Schemes for Project Developers and Investors (such as Production/Investment tax credit systems, financial mechanism and more).**

**US Wind Energy Market Outlook**

With a strong year in 2019, Frost & Sullivan expects positive fast-spaced annual capacity additions until 2024, mainly driven by the planned PTC phase-out as project developers have to chase the 2020 deadline to qualify for the full PTC value. In December 2019, the Senate passed a tax extenders deal that extends the deadline for PTC until 2021. The extended PTC will remain as the main driver for new onshore installations in the US between now and 2024, supplemented by State RPS as well as the corporate PPAs market. In addition, demand from utilities to meet customer preferences, sustainability goals and mandates under state RPS laws as well as demand from corporations will also drive the annual capacity additions until 2030.

Another 56 GW of capacity is expected to come online between 2020 and 2024 with annual capacity installations between 9 and 11 GW. The cumulative wind installed capacity is expected to reach 162 GW by 2024 from 105 GW in 2019 with a CAGR of 9.1% from 2019 until 2024. Post 2024, annual onshore capacity installation is expected

to decrease but annual additions increasing due to offshore wind installations coming online. The US cumulative installed capacity is forecasted to reach 230.1 GW by 2030 with annual wind energy investments varying between \$25 billion and \$40 billion from 2020 to 2030.



**Figure: Market Forecast of Annual Capacity (Onshore and Offshore) Additions in the US 2020-2030.**

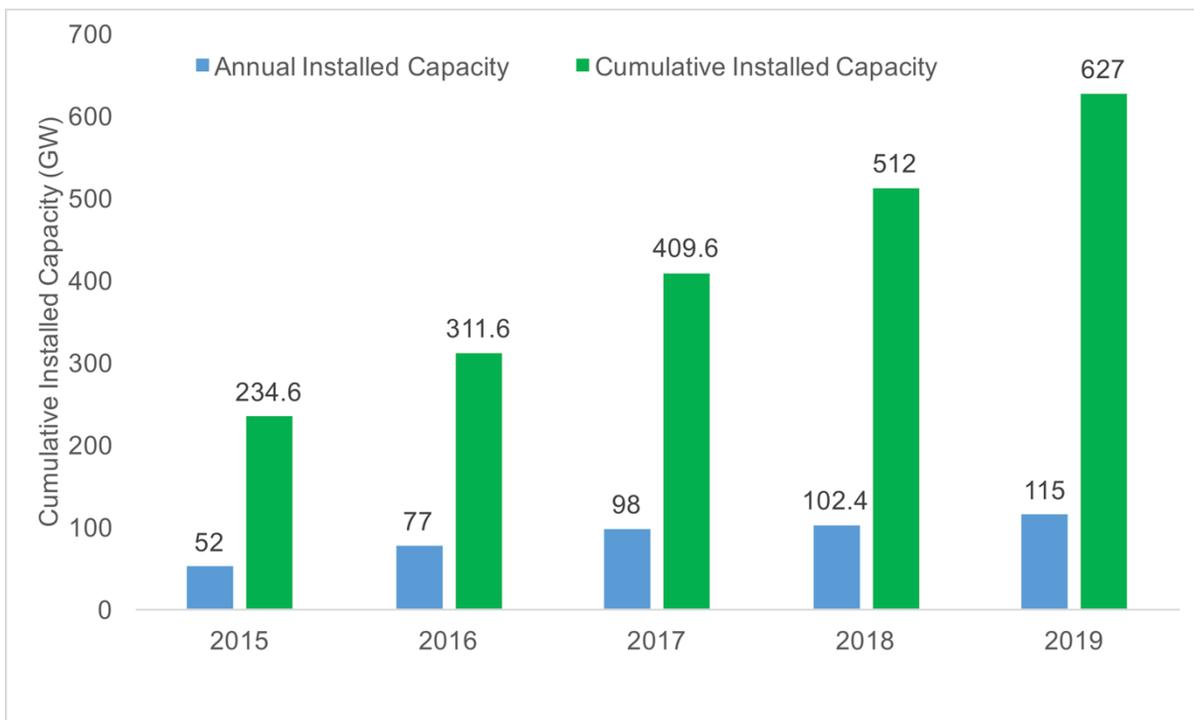
### Offshore Wind Energy Development in the US

Currently, the offshore segment accounts for only 30 MW. With growth in onshore capacity additions, currently many states are looking to harness offshore wind's rapidly expanding opportunity. States up and down the East Coast are aiming to develop over 25 GW of offshore capacity by 2035, with an initial target of 9 GW coming online by 2026.

## Global Solar PV Market

Over the last decade, Solar PV has become an increasingly competitive option for electricity generation across several regions for residential and commercial and utility-scale projects. Government policies including FITs and corporate PPAs continue to drive utility level solar PV growth, while self-consumption of electricity generated is an increasingly important business case for residential and commercial customers.

The global solar market saw strong growth in 2019 with 115GW of solar capacity added to the grid, bringing total solar PV capacity globally to 627 GW. This 115GW equated to \$130 billion of investment, with China, the United States and Europe key markets, but strong growth rates were also achieved in developing markets in Asia. The top five national markets – China, the United States, India, Japan and Vietnam – were responsible for 56% of newly installed capacity. The next five markets were Spain, Germany, Australia, Ukraine and the Republic of Korea. By end of 2019, the leading countries in terms of cumulative installed solar PV capacity are China, the United States, Japan, Germany and India.

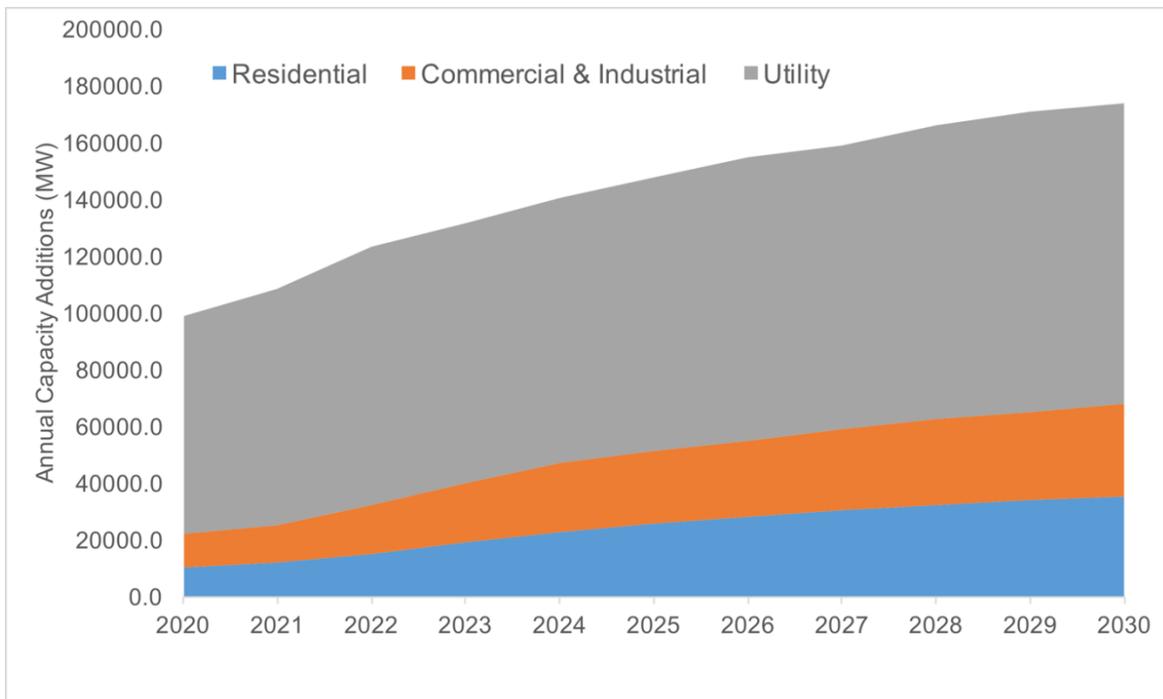


**Figure: Annual Installed Capacity (GW) and Cumulative Installed Solar PV Capacity (GW) from 2015-2019.**

## Global Solar PV Market Outlook

Similar to the global wind market, the market outlook for Solar PV continues to be strong. Frost & Sullivan forecasts that around ~1,500 GW of new capacity will be added between 2020 and 2030, accounting for a total investment of ~\$1.5 trillion. This translates into annual average investment of ~\$133 billion per year over the period to 2030. Annual capacity additions are expected to vary between 125 GW and 145 GW. The cumulative global solar PV market is expected to reach ~2,200 GW by 2030, when it will exceed the installed capacity of both coal and gas.

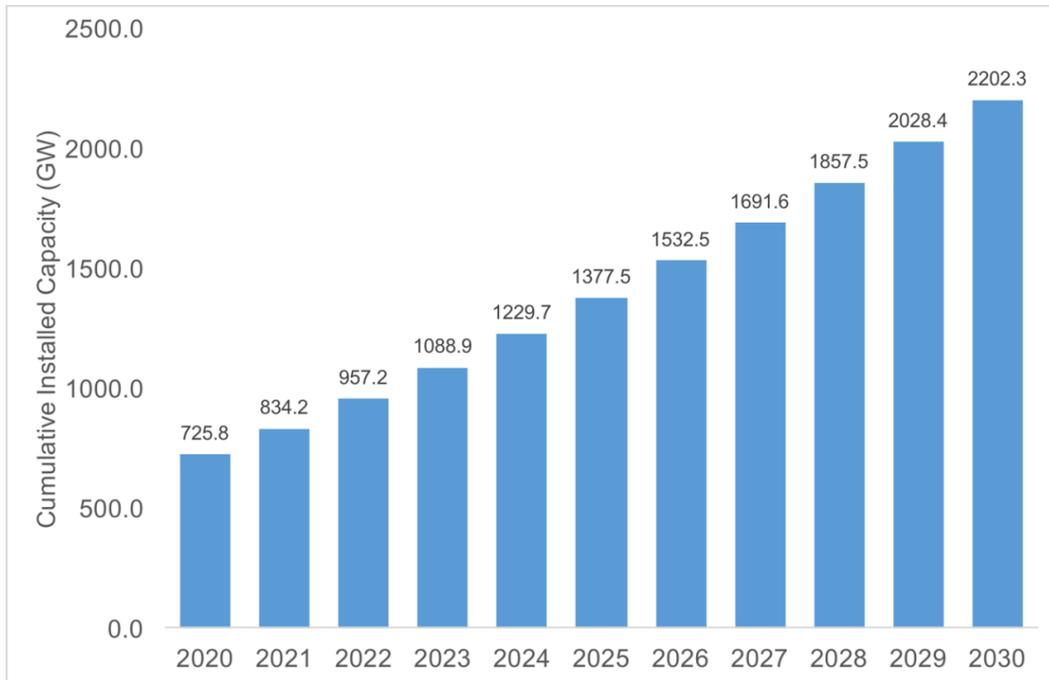
China will continue to be the largest solar PV market with annual capacity additions between 30 GW and 40 GW and investment between \$35 billion and \$45 billion. APAC (including India) will become the second largest solar PV market post-2020 and the region is expected to have average annual investments between \$25 billion and \$40 billion. Key countries with increasing solar PV installations include India, Japan, Australia, Vietnam and Indonesia.



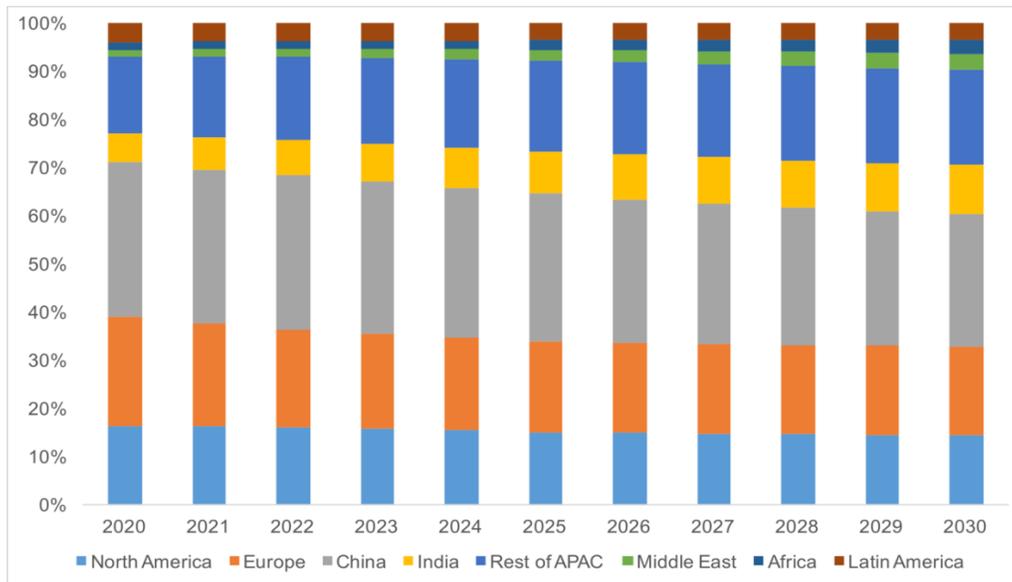
**Figure: Forecast of Annual Solar PV Capacity Additions (MW) between 2020 and 2030.**

Europe will be the third largest region after China and APAC (including India). Most European countries have moved beyond FITs and will be mainly driven by the competitiveness of solar generation and in corporate renewable power sourcing (including via direct bilateral PPAs). In addition, the European solar PV market will also be driven by governments' looking to meet their national renewable energy targets.

Annual European solar PV market installations are forecast to double from 15GW in 2020 to 30GW in 2030; key markets include Germany, Italy, UK, Spain, France, and Austria. There will also be potential for the retrofitting of existing solar PV farms, which is likely to boost capacity and output. Israel, which has an installed capacity of 1.2 GW has announced a new plan to invest \$23 billion over the next decade to install 15 GW of solar PV, which is achievable given the high solar PV potential in the south of the country.



**Figure: Forecast of Cumulative Installed Solar PV Capacity Additions (GW) between 2020 and 2030.**



**Figure: % Regional Share of Cumulative Installed Solar PV Capacity Additions (GW) between 2020 and 2030.**

North America is expected to remain the fourth largest market throughout the forecast period with annual capacity additions increasing from 17.4GW in 2020 to 23.5 GW in 2030. Annual solar PV investments will average \$35 billion over the decade. In the North American region, as costs fall, solar PV is increasingly viewed as a means to diversify the energy mix, while limiting the growth of CO<sub>2</sub> emission. Corporate PPAs are a big factor in boosting deployments in this region.

To the south, Latin America is expected to experience strong market growth, with annual installations increasing from 2GW in 2020 to 6GW in 2030. Brazil, Mexico and Argentina are expected to be key country markets.

The Middle East and Africa region is also expected to see substantial solar PV installations, driven by strong demand growth, declining technology costs and a desire in the Middle East to minimize per capita emissions. 5GW is forecast to be installed in 2020; by 2030 this will have increased to a forecast 20GW capacity added, a fourfold increase.

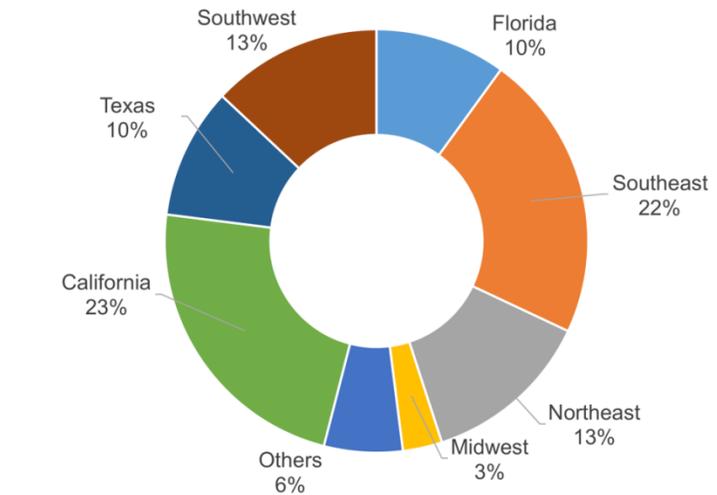
## US Solar PV Market

### Introduction

As of the end of 2019, the United States ranks second globally for both new installations and cumulative solar PV capacity. Since 2016, PV has represented approximately 30% of

new United States power generation capacity, with an estimated 34% in 2019. The country added 13.3 GW in 2019 and has a cumulative installed Solar PV capacity of 76 GW. Solar PV accounted for nearly 40% of all new US power capacity additions in 2019, the largest share to date. California again led all states in added capacity (3.1 GW), followed by Texas (1.4 GW) and Florida (1.4 GW).

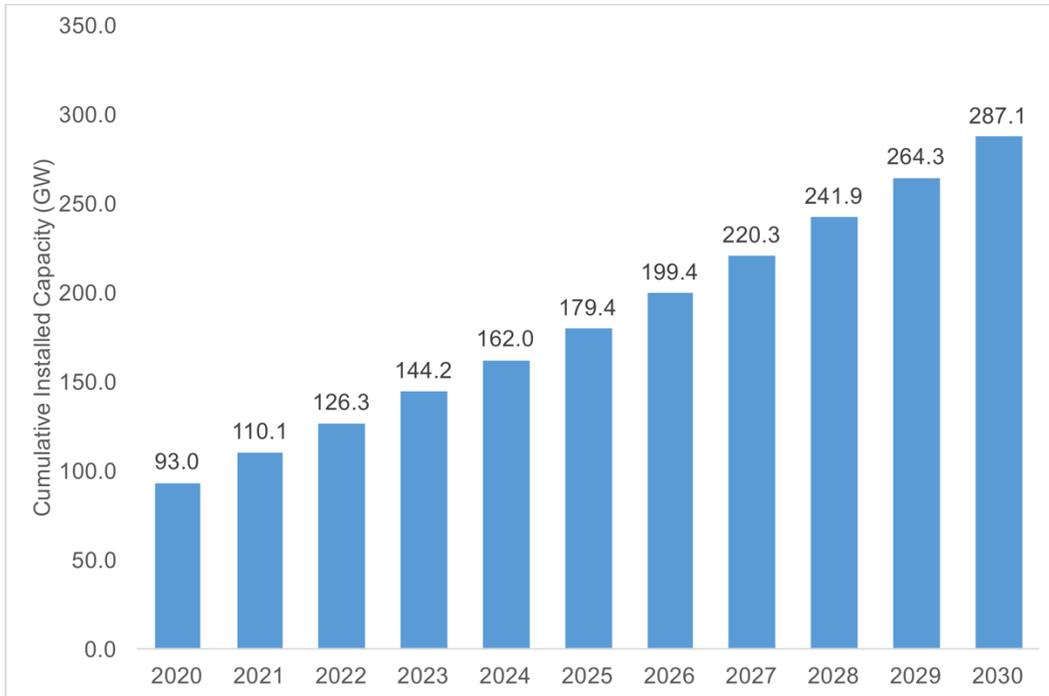
**Figure: US Solar PV Installations by Regions, 2019**



Electricity generated from solar PV still represents a relatively small but growing percentage in the US energy mix. As of 2019, solar PV accounted for 5.4% of net summer capacity and 2.6% of the total electricity generated in the US, which is a significant growth considering it accounted for just 0.1% share in 2010.

### US Solar PV Outlook

Solar PV will continue to be an attractive renewable option for the US in the coming decade. Frost & Sullivan expects that a combination of lower project costs, renewable mandates and corporate PPAs will drive new investment. Annual installations are forecast to increase from 16.2GW in 2020 to 21.9GW in 2030. The cumulative solar PV installed capacity is expected to increase from 93 GW in 2020 to reach 287.1 GW in 2030.



**Figure: US Solar PV Cumulative Installed Capacity (GW) Forecast 2020-2030**

## Israel Renewables Ecosystem

The growth engine behind renewables in Israel is the government's vision to utilize "natural gas or renewables only" for the production of energy by 2030. In order to realize this vision the government is putting major systems and regulations in place in order to completely replace the energy produced from coal with energy produced from solar sources. This transition is projected to produce a 6 fold increase in renewables and a 10 fold increase in energy storage capacity.

The four major drivers of the renewable energy market in Israel as stated in the Ministry of Energy's economic plan are: 1) the decreasing cost of solar technology 2) the global shift to electric vehicles 3) energy security 4) pollution regulations

- 1) **The decreasing cost and availability of solar infrastructure** due to cost reductions and technological advancements is driving the foundation of large solar energy projects.
- 2) **A global shift to electric vehicles** instead of internal combustion engine (ICE) vehicles. In the past years 14 countries, representing over 50% of total vehicle market unit sales, have declared a ban on new ICE vehicle sales by dates ranging from 2020 to 2040. The decision of China, the largest car market in the world with about 30% market share, to ban all ICE vehicles by 2040 was an end-game call for all manufacturers and lagging countries and puts an end to the ICE era. Israel has banned the import of new ICE vehicles by 2030.
- 3) **Energy security** will be actualized as a result of Israel producing energy from its own infrastructure (renewable energy projects) and natural resources (natural gas.)
- 4) **Global regulations** for the reduction of polluting and gas emissions. Israel is actively committed to the Paris Climate Agreement.

These trends propel Israel into a reality that requires a heavy transition to renewable energy sources and therefore promotes the need for energy storage solutions.

Israel is exceptional in its high population growth rate as well as its high electricity consumption. Today, solar power is almost exclusively the country's renewable energy source and this will be true through 2030.

To support the transition to realize the 2030 vision, the government is putting major systems and regulations in place:

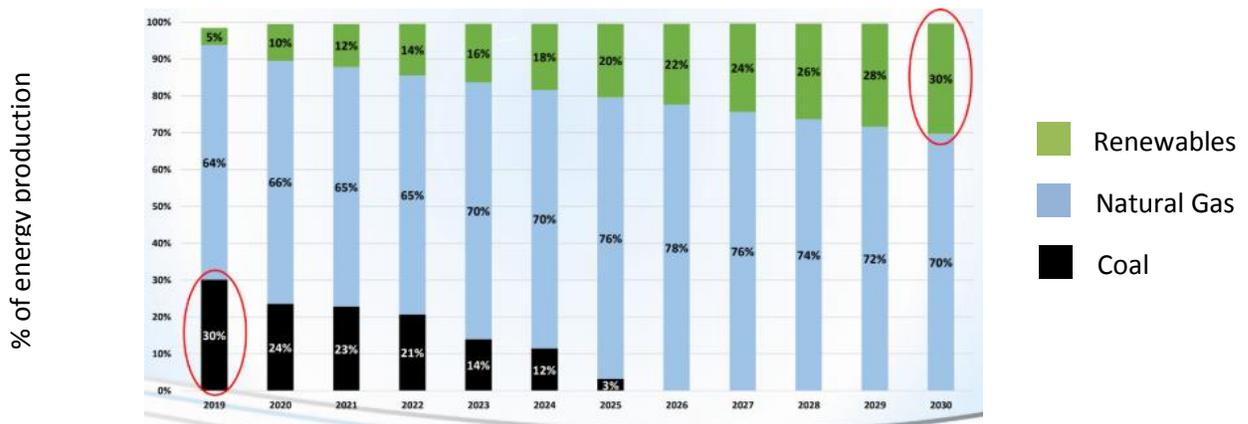
- Massive development of the electricity grid for the integration of solar energy.
- Promoting significant investment in R&D to upgrade energy storage.

- Implementing tools for developing a stable electrical system capable of handling sharp changes in production scale.
- Obligating any government or public building with an area exceeding 750 square meters to establish a solar system on at least half of the roof area
- Establishment of a fund for the construction of renewable energy sources for buildings owned by subsidized entities.
- Joint venture with the Israeli Lottery to build 1200 PV systems on public roof tops.
- Providing exemptions from having to obtain non-ionizing radiation permits for small rooftop PV facilities.
- Removing land allocation barriers and promoting land use for the establishment of renewable energy facilities.
- Establishing charging stations for electric vehicles.

The Ministry of Energy has detailed the following data in order to show how the energy ecosystem in Israel will transform in the next 10 years. (All graphs sourced from Energy Ministry)

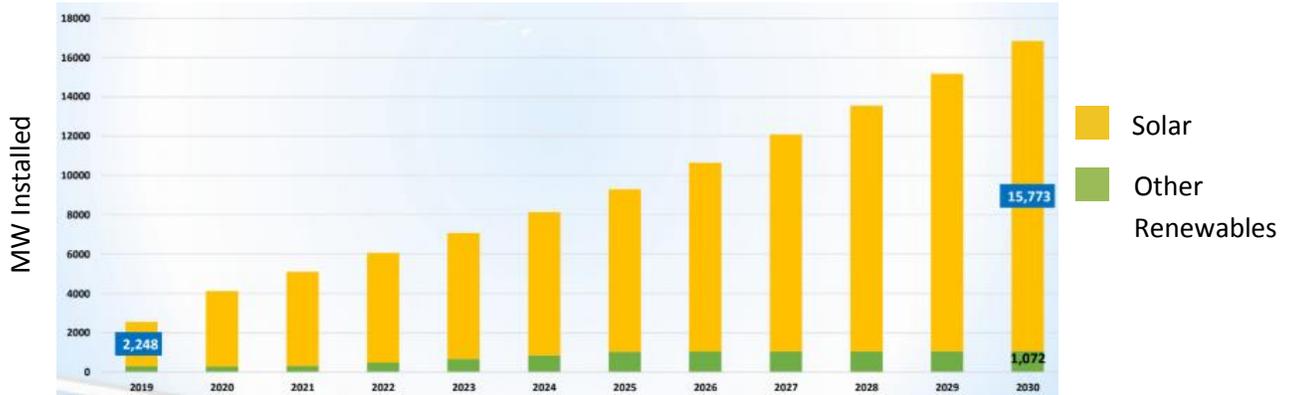
### Israel's Energy Source Composition

#### Renewables Will Replace Coal over the Next 10 Years

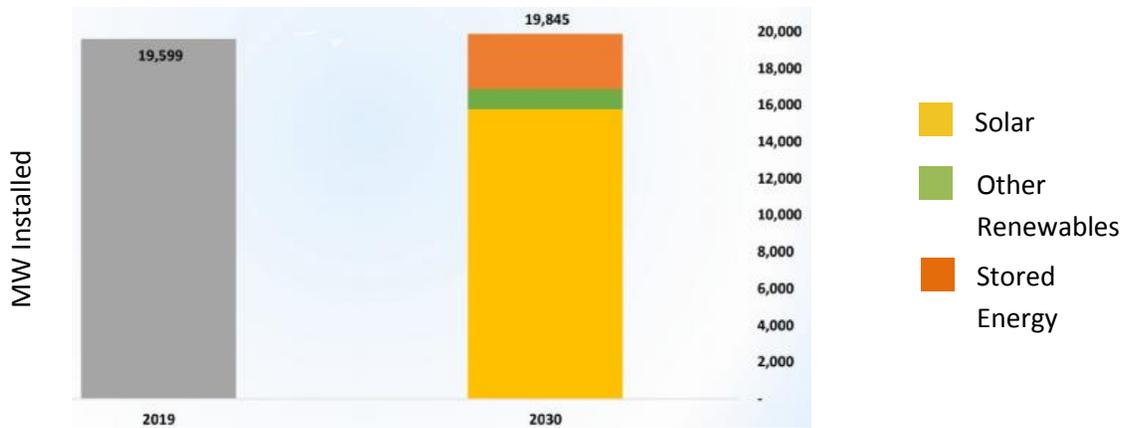


In the next decade it is expected that the capacity of renewable energy sources will increase 6 fold and that **they will amount to the same power capacity of all the energy sources powering Israel today. This represents more power stored than is produced today by Israel's largest coal-burning electricity plant Orot Rabin which produces around 2.7 GW.**

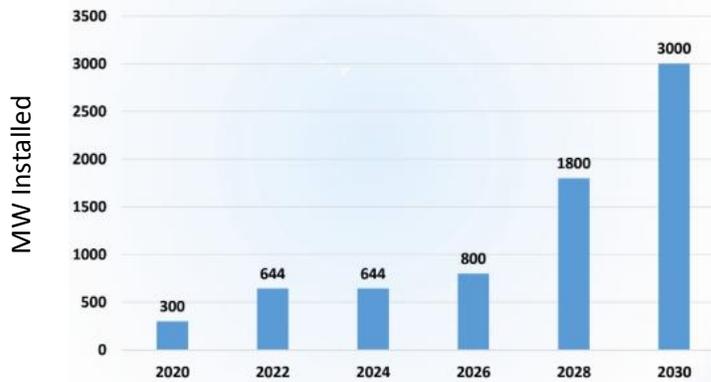
### Renewables 6 Fold Increase in the Next Decade



### Renewable Power in 2030 vs Total Power in 2019



### 10X Increase in Installed Stored Energy



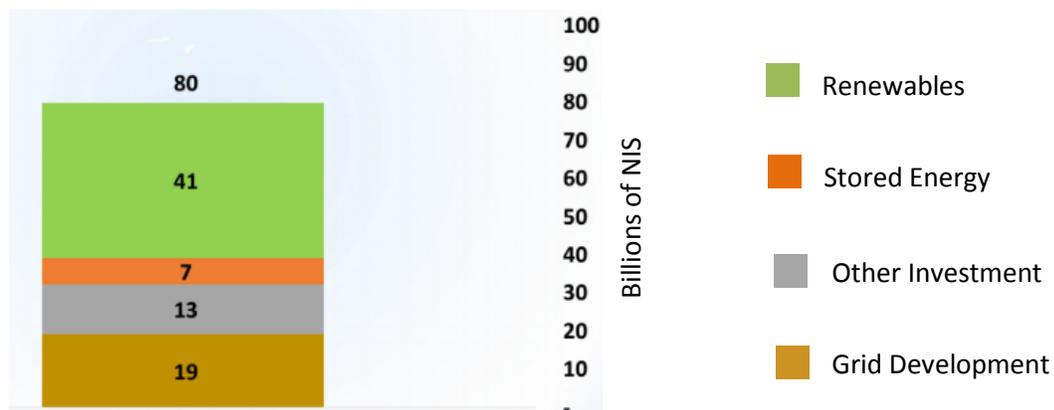
In 2030 **Israel is positioned to be the world leader in solar energy dependency** at a staggering 26% of energy produced by the country.

Despite the growing demand for electricity and due to the transition to renewable energy sources, Israel is experiencing an exponential decrease in Nox and SO2 levels.

By 2030, during the noon hours, 80% of the electricity generated in Israel will come from solar sources and this solar energy will surpass consumption demands during certain hours of the day.

The breakdown of investment from 2020 to 2030 in the energy sector is as follows. It can be seen that 7 billion NIS will be invested in energy storage solutions.

### Investment in Electricity Infrastructure by 2030



There are a whole slew of players involved in the Israeli renewables infrastructure ecosystem. The first category is comprised of B2C players involved in institutional and private home installations such as Solaredge. The second category is comprised of B2B or B2G players with small to medium sized portfolios such as Solpower, Arava Power Company, El-Mor, Ellomay Capital, and Meshek Energy (that primarily deals with kibbutz cooperatives projects and is a partner to Doral). The last category is comprised of B2G players that dominate the large governmental projects arena and have significant portfolios. These prominent players include Doral, Energix (which like Doral has presence in Europe and the US), and Enlight (which has strong presence in Europe).

Company	Market cap (29.11.2020)	Total Portfolio Size (% ownership and project development phases vary)	GW in Early Planning (out of total portfolio)
<b>Doral</b>	2.11 B NIS	3.8 GW	2.4 GW
<b>Enlight</b>	5.47 B NIS	4.1 GW	2.3 GW
<b>Energix</b>	6.4 B NIS	2.5 GW	1.2 GW

In conclusion, the Israeli ecosystem has major growth drivers pushing for a solar energy era such as the decreasing cost of solar energy equipment, pollution regulations, and electric vehicle regulations. The country is projected to become the most renewable energy dependent country in the world. To actualize its vision, the country is investing in new infrastructure for renewable energy production and in turn this infrastructure is projected to produce a 6 fold increase in renewables and a 10 fold increase in energy storage capacity. There are three major players primed to capitalize on this opportunity as well as a few smaller ones.

**Please see appendix E for a comprehensive overview of the Global Biogas and Natural gas markets.**

## Company Financial Analysis & Valuation

### Valuation Method & Approach

As part of a discounted cash flow (DCF), the accepted method used in financial valuations, there are several modifications to a company's valuation. In general, there are three primary methods within the DCF method:

1. **Real Options** - valuation method designated for programs/companies where the assessment is binary during the initial phases, and based upon science-regulatory assessment only (binomial model with certain adjustments).
2. **Pipeline assessment** - valuation method used for programs/companies before the market stage. The company's value is the total discounted cash flow, plus allocated costs and assessment of the future technological basis. The assessment of the future technological basis is established based on the company's ability to "produce" new projects and their feed rate potential.
3. **DCF valuation** - similar to companies not operating in the life sciences field, this method applies to companies with products that have a positive cash flow from operations.

Doral initiates and develops projects which operate and yield revenue in the long-term. It can therefore be viewed as property development and holding company with a pipeline of current and future projects. As such, we evaluate Doral based on an NPV of its current projects and possible future projects, including a probability factor using the "pipeline assessment".

### Company Financial Overview

Doral's grid connected projects' revenues from electricity sales for January-September 2020 totaled NIS 51 M. The projects' EBITDA for the same period was NIS 48 M and the FFO was NIS 42 M. The company had additional NIS 25 M in revenues from providing additional services.

As of September 30th 2020, The company has 75 MWp installed capacity of PV projects (most of them with very high tariffs), ~450 MWp of capacity in establishment, prior to establishment and/or after winning competitive procedures, plus an extra ~3,300 MWp of additional projects (in different stages) in the company pipeline.

The net profit in the 3<sup>rd</sup> quarter was NIS 3.6 M, compared to a loss of NIS 293,000 in 2019 corresponding quarter.

Doral's equity as of 30 September 2020 is NIS 220.5 M, 57% of its balance. As of 30 September 2019 the company had NIS 53.7 M, 29% of its balance. In its solo financial report, the company had NIS 98.2 M in cash as of 30 September 2020 and loans totaling NIS 119 M.

## Pipeline Valuation

### Pipeline Overview

To date, Doral has disclosed information about 34 clusters of projects, some of them are large-scale, and some encompassing numerous standalone projects with medium to low power range; totaling approximately 3,829 MW. These projects are in operations or various stages of development, in three countries (Israel, Italy and USA) and in main areas of renewable energy – mostly Solar PV, Wind and Energy storage. Below is the full scope of Doral's identified and disclosed projects based on information received from the company and based on our analysis:

#	Groups of projects	MW	Holdings
1	Israel - PV	1,373.9	51%
2	Israel - Wind, Biogas, Natural gas	44.62	63%
3	Italy - PV	447.2	80%
4	USA - PV and Wind	1,964.0	50%
<b>Total</b>		<b>3,829</b>	

### Methodology & Revenues Forecast

To evaluate each project's NPV we used the following procedure and parameters:

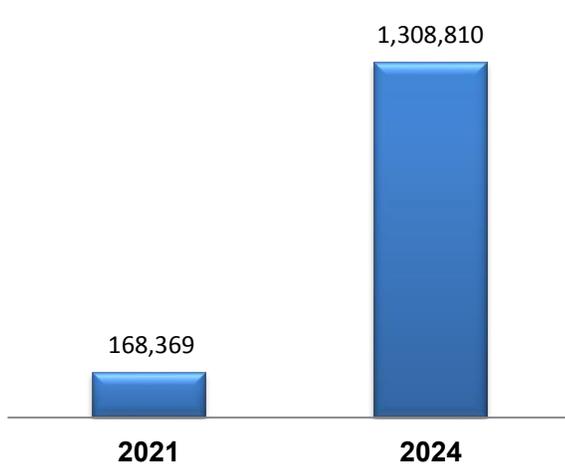
- Calculated the revenues generated by each project based on:
  - Its electricity production capacity.
  - The number of operating years.
  - Electricity contract price per MW.
  - Hours of electricity production based on similar projects and information received from the company's management.
  - Initiation fees derived from project budget (only for non-operating projects).
  - Employ PV degradation of the solar panel in an annual decrease of 0.4%.
  - Add extended operating years (over the contract period) assuming much lower electricity prices, based on the ministry of energy appreciation.

- Assigned financing expenses for each project.
- Subtracted operating expenses per project, based on data from the company and our estimations.
- Applied straight depreciation model for each project.
- Added tax rates for each project based on its legal structure.
- Implemented different success rates for the projects based on stages of operation and financial closing.
- Calculated NPV per project for Doral, based on the % of holdings by the company in the project (all cost and revenues were allocated based on % of holdings).
- We add Doral's WACC of 5.29% (see Appendix B).

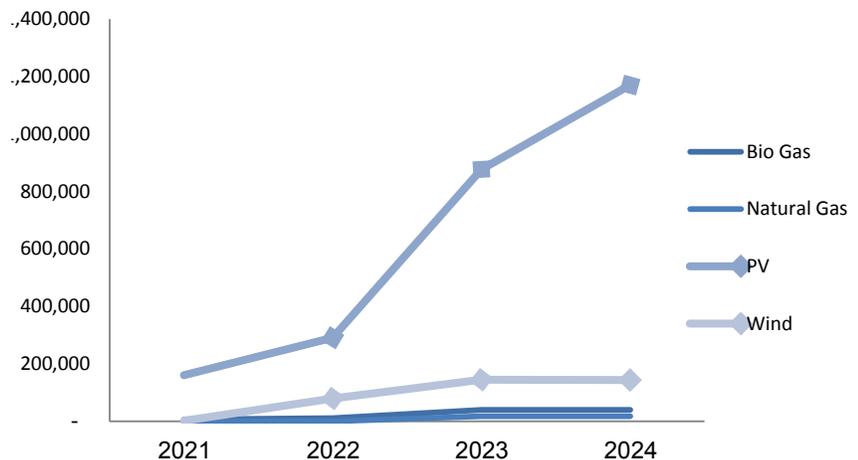
We assume revenues from PV and Wind will dramatically increase over the coming years as the company will engage in additional large projects, especially in Italy and the USA. For example, we forecast that Doral revenues in 2021 will be NIS 168M (representing 100% of holdings) whereas nearly all revenues are PV project-based. However, we assume that by 2024 total revenues will total NIS 1,309 million, whereas 85% from PV, 10% from Wind, 5% from natural and bio gas as shown below. On the right chart, we display the incline estimated increase in PV and Wind revenues during the forecast period.

**Analysis of Doral's projects revenues (Revenue is in NIS 000s)**

**Total Revenues**



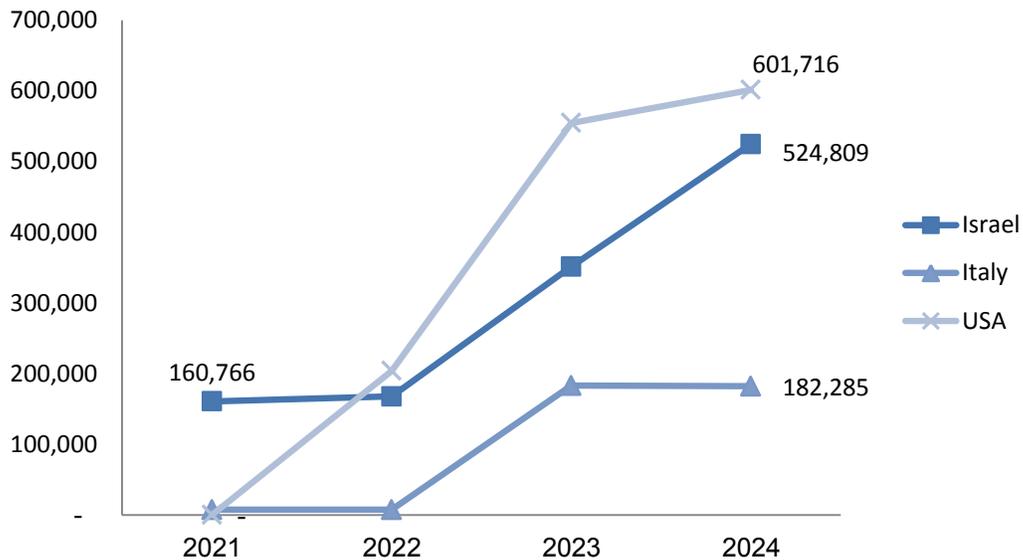
**Revenues by Type 2021-2024**



As of today, all of Doral's revenues are generated through Israeli facilities. In accordance with the company strategy to expand its' operations to the USA and Italy, revenues from the USA are expected to surpass revenues from Israel by 2024. USA will become the

dominant revenue generating market as we show in the below figure (revenue is in NIS 000s; represents 100% holdings):

**Geographical Revenue Analysis (Revenue is in NIS 000s)**



Based on the above parameters, we evaluate the company's pipeline at NIS 2.19 billion as we present below:

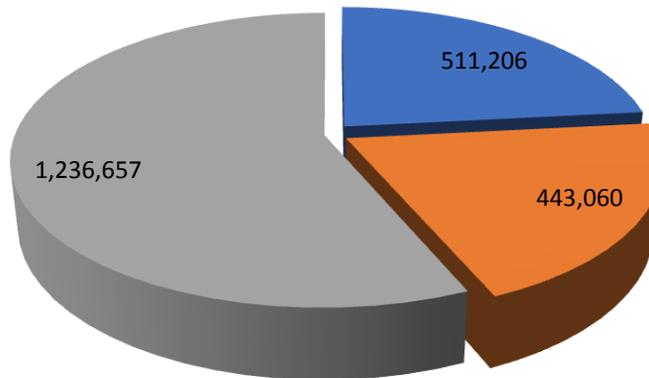
#	Groups of projects	NPV
1	Israel - PV	840,125
2	Israel - Wind, Biogas, Natural gas	109,283
3	Italy - PV	358,132
4	USA - PV and Wind	883,382
<b>Total pipeline value</b>		<b>2,190,923</b>

<sup>1</sup>NPV calculation is based on: a) considering company holdings; b) probability parameters.

The pipeline valuation takes into consideration the different stages of each project. For example, one of the major projects in the USA will have a grid connection in 2022-2023 and depends on accomplishing several milestones to receive the permanent permit. Thus, we evaluate Doral's pipeline based on the different stages for each project and based on the forecast grid connection year.

We forecast that project which are operating/ in establishment/ after winning tenders are valued at NIS 511.2 M, additional projects that are in advanced development are valued at NIS 443 M and projects in initiation stage are valued at NIS 1,236.6 M, as we show below:

### Doral's Project Pipeline (NPV breakdown; NIS 000s)



■ Operating, in establishment, after winning tenders ■ In advanced development ■ In initiation

### Non-pipeline projects

As mentioned, we identified 34 clusters of projects totaling 3,829 MW that are already operating or will commence operation during 2021 to 2024. However, in our view, the company has a vast pipeline of future projects beyond 2024 of over 2,000MW. **We did not take these projects into consideration as they are still in the early stage of development. Thus, we assume an upside in our valuation.**

### Equity Value

We evaluated Doral equity value based on 34 clusters of projects within the pipeline the company has identified and disclosed and that we have analyzed. To the sum of the different projects NPV, we added management fees that the company is entitled to receive. Furthermore, the company is also entitled to receive an initiation fee in any project that completes the financial closing.

On the expenses side, Doral has general and administrative (G&A) expenses as well as selling and marketing expenses (mainly due to business development costs for future projects). We consider the baseline G&A expenses as reported in the company financial reports with a 2% annual increase as the company will need to support its progress.

The company's share in cash was NIS 341.5 million on 30 September 2020 with unallocated loans and bonds (i.e., not related to a specific project) of NIS 114.7 million and carry forward taxes of NIS 44 million. We added these as non-operational assets/liabilities.

Below is our equity value breakdown:

<b>Total Pipeline</b>	<b>2,190,923</b>
<b>Income from management &amp; Initiation fees</b>	364,655
<b>G&amp;A expenses</b>	(187,453)
<b>EV</b>	<b>2,368,125</b>
<b>Non operating assets/liabilities</b>	
Cash	341,460
Loans	(114,650)
Carry forward tax (30.9.20)	44,100
<b>Total non-operating</b>	<b>270,910</b>
<b>Equity Value</b>	<b>2,639,036</b>

Based on the above parameters, we evaluate the company's equity value at NIS 2.6 billion. This valuation encompasses an identified project totaling 3,829 MW.

### Sensitivity Analysis

The table below presents Doral price target concerning the capitalization rate. We set a range of 0.5% change from our WACC model (see Appendix B). The company has 143.9M shares as of 23 November 2020.

Cap. rate	Price target (NIS)
5.79%	17.3
5.29%	18.3
4.79%	19.4

**We estimate the price target to be range between NIS 17.3 and NIS 19.4; a mean of NIS 18.3.**

### Valuation by multiples

We also explored EV/EBITDA multiples known in the Green & the Renewable Energy industry as calculated by Professor Demodaran of New York University (NYU).<sup>1</sup> Based on 22 companies in the Green & the Renewable Energy sector, EV/EBITDA multiplier for 2020 is 17.5. In accordance with its pipeline, the company 21` EBITDA is NIS 137 M. Hence Doral's EV/EBITDA multiplier equals 17.26 (=2,386M/137M), similar to its industry benchmark.

<sup>1</sup> [http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/vebitda.html](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/vebitda.html)

## Contact Details & Management

Doral Renewable Energy Resources Group

6 Hachilazon Str,

Ramat-Gan 5252270

Israel

Tel: +972 74 7876888

Email: [info@doral-energy.com](mailto:info@doral-energy.com)

### **DORI DAVIDOVITZ, Owner and Active Chairman**

Economist, real estate appraiser, and the founder of the group (along with Alon Kessel).

Leads the development and growth of the group from the very first days.

### **YAKI NOYMAN, CEO**

Electrical and electronics Engineer. Has been employed by the group for about twelve years, and has been leading its development and growth since its early days. The company's CEO for about six years.

### **MATAN BARZILAI, CFO**

Lawyer and accountant, employed by the group for the past four years. CFO for about two years.

## Appendices

### Appendix A

#### Financial Reports (Hebrew)

#### Profit and Loss Statement (NIS 000s)

קבוצת דוראל משאבי אנרגיה מתחדשת בע"מ

דוחות תמציתיים ביניים מאוחדים על רווח או הפסד ורווח כולל אחר (באלפי ש"ח)

לשנה שהסתיימה ביום	לתקופה של שלושה חודשים שהסתיימה ביום		לתקופה של תשעה חודשים שהסתיימה ביום		
	31.12.2019	30.9.2019	30.9.2020	30.9.2019	
מבוקר	בלתי מבוקר		בלתי מבוקר		
					<b>הכנסות:</b>
4,840	1,360	19,548	3,418	25,251	הכנסות ממתן שירותים ואחרות
3,347	1,109	60	2,530	1,769	חלק החברה בתוצאות תאגידיים המסופלים לפי שיטת השווי המאזני, בניכוי חלקה בעסקאות פנימיות, נטו
8,187	2,469	19,608	5,948	27,020	<b>סה"כ הכנסות</b>
					<b>הוצאות:</b>
2,252	339	11,226	1,353	12,996	עלות ההכנסות
8,163	2,153	4,123	5,802	10,230	הוצאות הנהלה וכלליות
464	302	376	302	1,132	הוצאות אחרות
10,879	2,794	15,725	7,457	24,358	<b>סה"כ הוצאות</b>
(2,692)	(325)	3,883	(1,509)	2,662	<b>רווח (הפסד) מפעולות רגילות</b>
1,273	434	1,839	1,113	15,074	הכנסות מימון
(1,861)	(255)	(1,542)	(623)	(5,521)	הוצאות מימון
(3,280)	(146)	4,180	(1,019)	12,215	<b>רווח (הפסד) לפני ניכוי מסים על ההכנסה</b>
712	(147)	(526)	460	811	הכנסות (הוצאות) מסים על ההכנסה
(2,568)	(293)	3,654	(559)	13,026	<b>רווח (הפסד) לתקופה</b>

הבאורים המפורטים מהווים חלק בלתי נפרד מהדוחות הכספיים התמציתיים ביניים.

## Balance Sheet (NIS 000s)

קבוצת דוראל משאבי אנרגיה מתחדשת בע"מדוחות תמציתיים ביניים מאוחדים על המצב הכספי (באלפי ש"ח)

31.12.2019	30.09.2019	30.09.2020	
מבוקר	בלתי מבוקר		
			<b>נכסים</b>
			<b>נכסים שוטפים:</b>
31,442	8,921	74,706	מזומנים ושווי מזומנים
5,934	3,168	6,307	מזומנים מוגבלים בשימוש
3,659	4,108	8,438	חייבים ויתרות חובה
9,056	8,817	-	תמורה נוספת בגין הנפקת מניות
50,091	25,014	89,451	<b>סך הכל נכסים שוטפים</b>
			<b>נכסים לא שוטפים:</b>
3,091	-	24,260	מזומנים מוגבלים בשימוש
			השקעה בתאגידים מוחזקים המטופלים לפי שיטת
124,713	102,273	177,479	השווי המאזני
9,523	7,098	31,059	הוצאות מראש - פרויקטים
32,957	33,711	30,779	רכוש קבוע
4,049	4,362	3,637	נכסים בגין זכויות שימוש
767	541	547	מסים נדחים
-	-	4,855	מכשירים נגזרים
-	-	11,789	חייבים בגין הסדרי זיכיון
9,405	9,405	9,405	מוניטין
184,505	157,390	293,810	<b>סך הכל נכסים לא שוטפים</b>
234,596	182,404	383,261	

הביאורים המצורפים מהווים חלק בלתי נפרד מהדוחות הכספיים התמציתיים ביניים.

## קבוצת דוראל משאבי אנרגיה מתחדשת בע"מ

## דוחות תמציתיים ביניים מאוחדים על המצב הכספי (באלפי ש"ח) (המשך)

31.12.2019	30.09.2019	30.09.2020	
מבוקר	בלתי מבוקר		
			<b>התחייבויות והון</b>
			<b>התחייבויות שוטפות:</b>
5,047	406	2,527	חלויות שוטפות של הלואות לזמן ארוך
587	587	438	חלויות שוטפות של התחייבויות בגין חכירות
-	2,254	-	משיכת יתר מתאגיד בנקאי
355	392	130	ספקים ונותני שירותים
2,360	2,419	2,836	זכאים ויתרות-זכות
-	-	275	חווה אקדמה
8,349	6,058	6,206	<b>סך הכל התחייבויות שוטפות</b>
			<b>התחייבויות לא שוטפות:</b>
30,892	44,203	4,967	הלואות לזמן ארוך מצדדים קשורים
117,231	56,297	125,852	הלואות לזמן ארוך מאחרים
3,569	3,845	3,371	התחייבויות בגין חכירות
21,694	18,258	22,344	מסים נדחים
173,386	122,603	156,534	<b>סך הכל התחייבויות לא שוטפות</b>
			<b>הון:</b>
			<b>הון המיוחס לבעלים של החברה האם:</b>
25	25	-	הון מניות נפרע
28,666	28,666	173,337	פרמיה על מניות
124	1,933	13,524	עודפים
1,336	1,336	-	רכיב המרה בהלוואות בעלים המירות
585	585	-	תקבולים על חשבון אופציות
22,120	16,728	33,354	קרנות הון אחרות
52,856	49,273	220,215	<b>סה"כ הון המיוחס לבעלים של החברה האם</b>
5	4,470	306	<b>הון מיוחס לזכויות שאינן מקנות שליטה</b>
52,861	53,743	220,521	<b>סה"כ הון</b>
234,596	182,404	383,261	

24 בנובמבר 2020

תאריך אישור  
הדוחות הכספייםיקי נוימן  
מנכ"לדורון דודוביץ  
יו"ר הדירקטוריוןמתן ברזילי  
סמנכ"ל כספים

הביאורים המצורפים מהווים חלק בלתי נפרד מהדוחות הכספיים התמציתיים ביניים.

## Appendix B - Capitalization Rate

Cost of equity capital ( $k_e$ ) represents the return required by investors. The capitalization rate is calculated using the CAPM (Capital Asset Pricing Model). It is based on a long-term 30-year T-bond with a market risk premium, and based on Professor Aswath Damodaran's (NYU) commonly used sample ([www.damodaran.com](http://www.damodaran.com)). As of July 1, 2020, the Israeli market risk is estimated at 6.26%.

A three-year market regression Beta is 0.57, according to a sample of 22 companies (at various stages), representing the renewable energy sector ([www.damodaran.com](http://www.damodaran.com)). We also add specific risk premiums to the company as a major part of its projects are outside of Israel with different regulatory risks.

Weighted average cost of capital model (WACC) is estimated as follows:

$$WACC = R_d(1-t) * (D/D+E) + K_e(E/D+E) + ArP$$

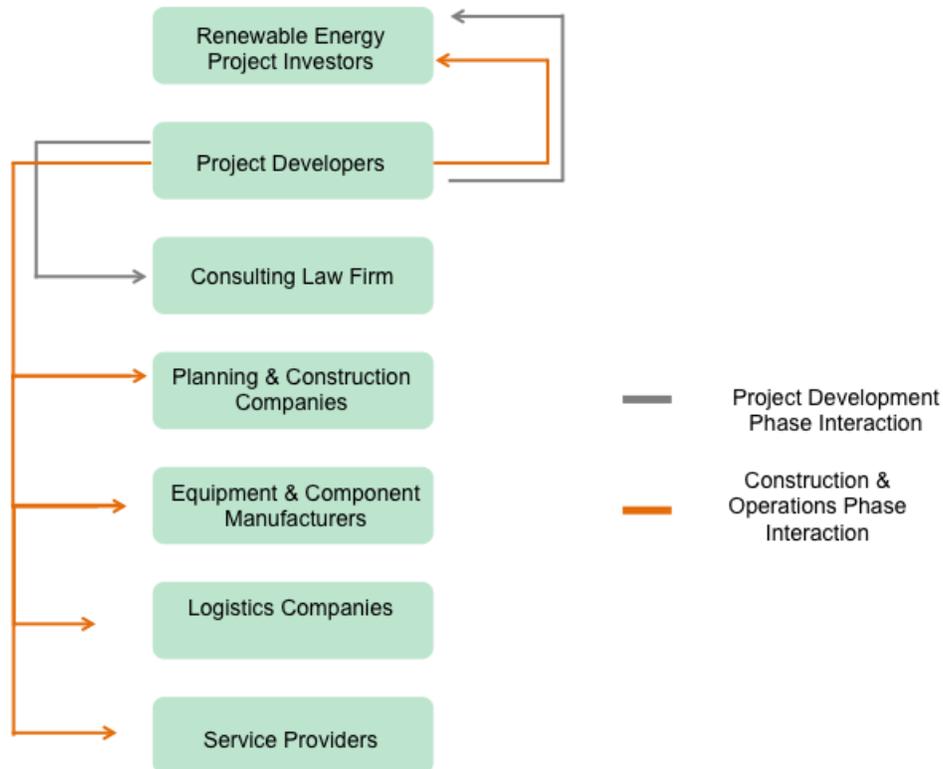
$$\{K_e = R(f) + \beta_e * (R(m) - R(f))\}$$

The company's financial structure, based on the WACC model, is as follows:

WACC	Parameter	Data	Source
Long-term (30 years) T-bond	R(f)	1.95%	Rf - Israeli treasury bonds - 30 years, as of 10/11/2020
Market risk premium	R(m) - R(f)	6.26%	Based on Damodaran (July 1, 2020) - Israel
Beta	$\beta_e$	0.57	Beta sample - Renewable energy (Damodaran, 2020)
Cost of Capital	$K_e$	5.55%	
Debt, rate	$R_d$	2.84%	Weighted average
Debt (%)	$D/(D+E)$	37.99%	Q3 20 financial data
Equity(%)	$E/(D+E)$	62.01%	Q3 20 financial data
Tax	t	23.00%	
Additional Risk Premium	ArP	1.00%	
WACC= $R_d(1-t) * (D/D+E) + K_e(E/D+E) + ArP$		5.29%	

We therefore estimate the company's WACC to be 5.29%.

## Appendix C - Renewable Energy Market Structure



Project developers are the key stakeholders in the renewable energy market structure. They develop renewable energy projects and either retain the ownership of the project or sell assets to third parties such as utilities or independent power producers (IPPs). Many IPPs themselves are project developers, and utilities do also develop their own projects. Project developers originate renewables projects, find a suitable investor and convince local communities of the value of the renewable project, and steer them through the permitting and design process. Examples of key project developers besides Doral Energy include Boralex, Falck Renewables, ERG, ABO Wind and Avangrid Renewables in the US.

In the early project development phase, the project developer will collaborate with external consulting law firm to evaluate the viability of potential sites for renewable projects (economically, logistically, and otherwise). Once a viable site is identified, the project developer will work with the consulting firm to begin the work on acquiring rights, permits and check for legal issues before deciding to start the project.

Once the initial site feasibility checks and other legal complications and issues are verified and sorted out, the project developer and the consulting firm work together on finalizing the land acquisition, obtain environmental and building permits, obtain regulatory approvals. The project developer either through in-house team or through external consulting firm will negotiate with outside companies for the following:

1. Planning and construction of renewable projects
2. Purchase of equipment and components
3. Logistics



Lastly, the project development company will look for a buyer to sign a PPA for the

## Appendix D - Incentive Schemes for Project Developers and Investors

The US Department of Energy's (DOE's) Wind Energy Technologies Office (WETO) provides incentives for private investment, including tax credits and financing mechanisms such as tax-exempt bonds, loan guarantee programs, and low-interest loans.

### Tax Credits

In the US, the renewable energy projects are eligible for two primary federal incentives: the production tax credit (PTC) and investment tax credit (ITC). The PTC is available for eligible wind projects and the ITC is available for solar projects, which commence construction up to the end of 2020 and 2021, respectively.

### Renewable Electricity Production Tax Credit (PTC)

The PTC federal incentive is a per kWh credit for the generated electricity from wind turbines. To qualify for the PTC incentive, the electricity must be sold by the project developer to external sources. The PTC can be claimed for a 10-year period once a qualifying wind facility is placed in service. Under current law, the wind facilities for which construction began before January 1 are eligible for PTC.

Construction Date	Estimated allowable tax credit
After Dec. 31, 2016	1.9 cents/kWh
By Dec. 31, 2017	1.8 cents/kWh
By Dec. 31, 2018	1.4 cents/kWh
By Dec. 31, 2019	1.0 cents/kWh
By Dec. 31, 2020	1.5 cents/kWh

### Business Energy Investment Tax Credit (ITC)

The ITC is a federal income tax credit for capital investments in solar energy projects. Unlike the PTC, this one-time credit is based on the investment amount (USD) and earned when the equipment is placed into service. Under the ITC, owners of qualifying solar projects can claim a tax credit up to 30% of their project's capital costs. Eligible solar projects that are under construction before:

- January 1, 2020 will qualify for a 30% ITC.
- January 1, 2021 will qualify for a 26% ITC.
- January 1, 2022 will qualify for a 22% ITC.

## **Financing Mechanisms**

The Rural Energy for America Program (REAP) Renewable Energy Systems & Energy Efficiency Improvement Loans & Grants: The US Department of Agriculture provides guarantees on loans for energy efficiency improvements and construction of renewable energy technologies, including small and large wind energy projects. Agricultural producers and rural small businesses are eligible to apply for the REAP Grant which guarantees on loans for up to 75% of total eligible project costs. Project applicants must provide at least 25% of the project cost and demonstrate sufficient revenue to repay the loan and cover any operation and maintenance expenses.

### **Title XVII Innovative Clean Energy Loan Guarantee Program**

This was initiated as a part of the Energy Policy Act of 2005 to help stimulate the financing of renewable energy projects including wind energy, energy efficiency projects and advanced transmission and distribution projects. The Title XVII loan program authorizes the DOE Loan Programs Office to guarantee the debt on energy production or manufacturing facilities associated with a broad spectrum of energy technologies, including renewables. The government guarantee on the debt lowers the risk associated with funding wind and other clean energy projects, making more capital available to the industry. For each loan guarantee awarded, the government sets aside a credit subsidy—a sum of money that serves as insurance in case the project fails.

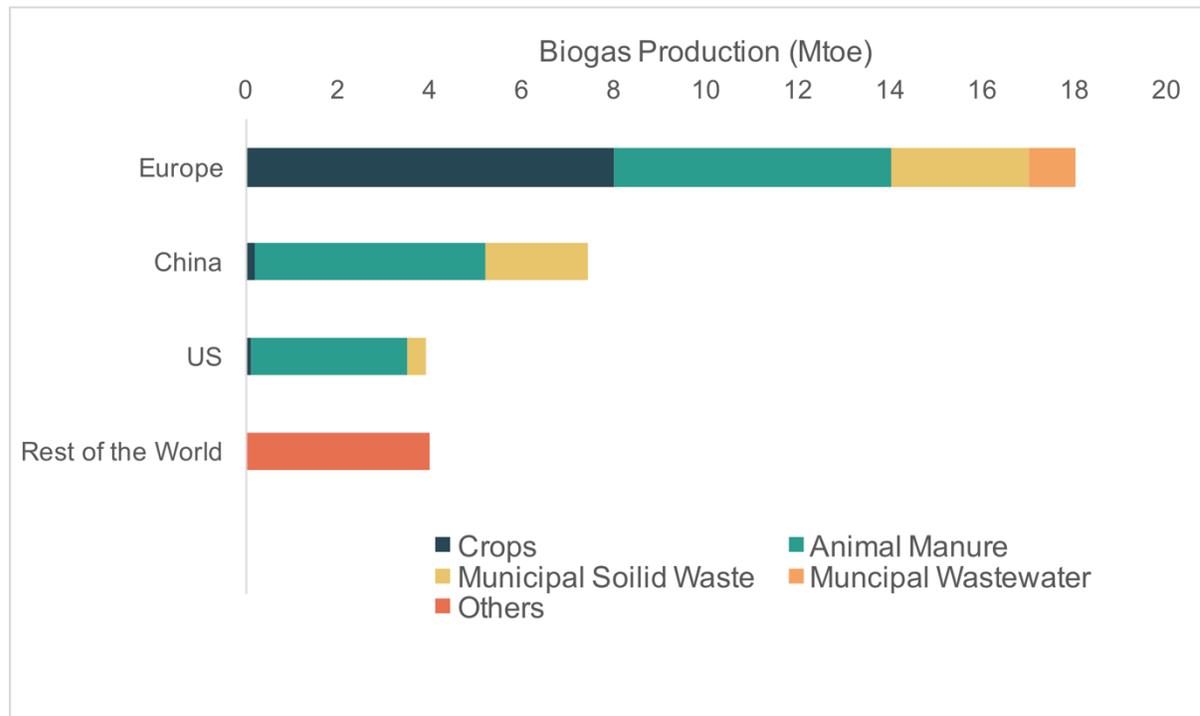
## Appendix E – Global Biogas and Natural gas markets

### Global Biogas Market

#### Introduction

Biogas is a mixture of methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>) and small quantities of other gases that is produced by the decomposition of organic waste in the absence of oxygen. Biogas offers a sustainable energy solution for the electrification of remote and rural regions where access to national grids is more challenging. It can also be an alternative feedstock to natural gas, if quantities are available. The development of biogas and its related infrastructure has been globally uneven in the last 10 years, and electricity generated from biogas represents just 0.3% of the total primary energy mix. This is mainly due to uneven availability of feedstock and lack of supportive government policies that encourage its production and use in many markets.

Since the last decade, the global cumulative installed biogas market has increased by a factor of two from 9.5 GW in 2010 to 19.5 GW in 2019. Annual biogas investment in 2019 was \$25 million.



**Figure: Biogas production by region and by feedstock type (in Million tons of oil equivalent (MTOE)), 2018 (Source: IEA)**

The global biogas market is dominated by Europe which accounts for 72% of the total market. Germany is the largest market in Europe, and home to two-thirds of Europe's biogas plant capacity. Other countries such as Denmark, France, Italy and the Netherlands have also actively promoted biogas production. In the US, the primary production for biogas has been through landfill gas collection, which today accounts for nearly 90% of its biogas production. The world's top markets in terms of cumulative installed capacity are Germany, the US, Italy, China, the UK, France, Turkey and Thailand, which combined accounted for 78% of the world's total biogas installed capacity.

Globally, almost 65% of the biogas produced is used to generate electricity and heat and around 30% is estimated to be utilized for heating commercial buildings and in the residential sector for cooking and heating. The remaining 5% is upgraded to bio-methane and blended into the gas networks or used as a transport fuel. With increasing concerns over the amount of municipal waste generated, there has been growing interest in biogas production from municipal organic waste and to reduce the amount of methane (CH<sub>4</sub>) released into the atmosphere.

### Key Market Drivers and Restraints

Drivers	1–2 Years	3–4 Years	5–9 Years
GHG reduction potential through processing and use of methane generated from organic waste.	H	H	H
Increasing potential for biogas for electrification of rural and remote regions.	H	H	H
Increasing waste volumes will increase the available feedstock.	H	H	M

Restraints	1–2 Years	3–4 Years	5–9 Years
High power generation and transportation costs, lack of connectivity to gas network and lack of government support policies inhibit growth	H	H	H
Poor waste collection methods,	H	M	M

improper segregation and lack of infrastructure challenges biogas development.			
Lack of social acceptance for biogas as a medium for generating electricity and heating purposes .	H	M	L

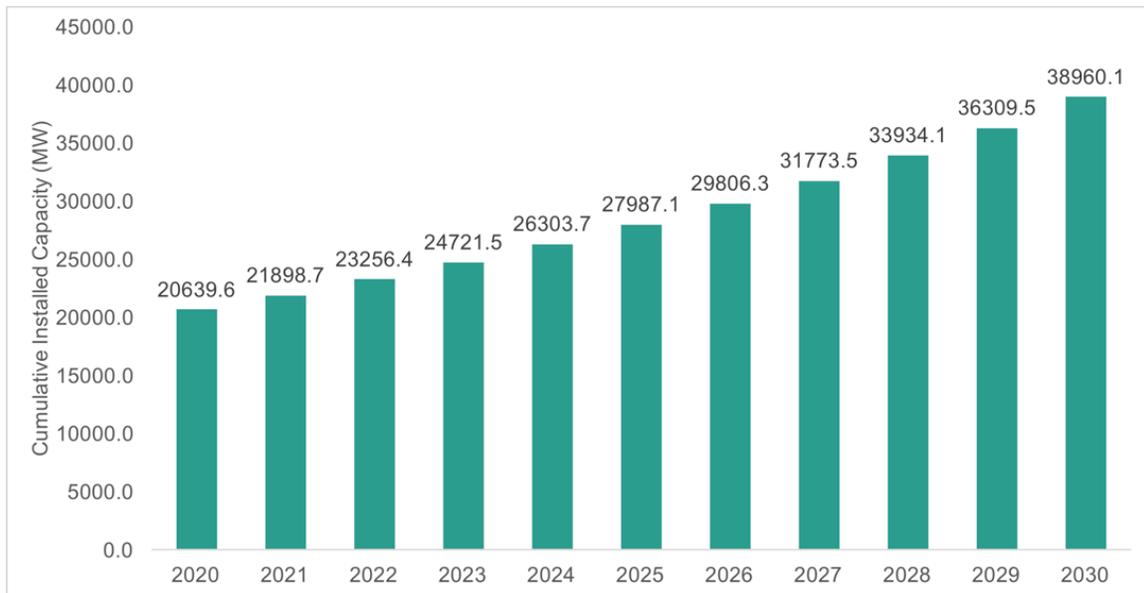
**Impact Ratings: H = High, M = Medium, L = Low**

### Key Market Trends

- **Flexible energy production:** As the share of RES increases in the global energy mix, the need for flexible energy sources to balance the intermittent nature of RES is growing. Biogas plants can offer this flexibility and the generated biogas can be stored and utilized during peak demand times.
- **Supporting Circular Economy Agenda:** The main sustainable trend that will drive the global biogas market in the coming decade will be the circular economy. Once the biogas is produced from the organic waste, the leftover sludge can be used as organic fertilizer.
- **Biogas as an Effective Waste Management Solution:** Organic municipal waste presents lot of challenges to human health, water and air quality, and to businesses that must manage this waste. Through biogas generation, these challenges can be addressed and new revenue can be obtained.
- **Increasing Digitalization of Biogas Plants:** Digitalization increases the flexibility of the biogas plants and generates multiple revenue opportunities through new business models.

### Market Outlook for Biogas

The size of global biogas market is forecast to increase from 19.5 GW in 2019 to ~ 39 GW in 2030. Europe will remain the dominant market throughout the forecast period followed by the US and China. Unlike wind and solar PV, biogas plants provide flexibility to the electricity grid through the provision of balancing and other ancillary services to the grid. Recognizing the value of these services would help to spur future biogas global deployments. However, the key barriers like high generation costs and lack of favorable government regulatory frameworks need to be addressed first.



**Figure: Forecast of Global Cumulative Installed Biogas Capacity (MW), 2020-2030**

## Global Natural Gas Market – Industrial Segment

### Introduction

Although not as effective for decarbonization as renewable energy sources, natural gas can still play a role towards a decarbonized energy system. Since 2010, there has been an increase in the consumption and utilization of natural gas across industrial segments in Europe and the US. The combination of CHP system with natural gas provides instant electricity and heat energy for the industrial segments. These systems can lower carbon emissions, possess high efficiency (up to 90%) and can substantially lower the energy costs vs. separate heat and power generation systems, and offer numerous financial benefits. In the US, the industrial sector accounted for 33% of the total US natural gas consumption.

Although industry accounts for a great deal of natural gas consumption across Europe and the US, this industrial consumption is concentrated in pulp and paper, metals, chemicals, petroleum refining, stone, clay and glass, plastic, and food processing industries. These businesses account for over 84% of all industrial natural gas use in Europe and the US.

### Key Market Drivers and Restraints

Drivers	1–2 Years	3–4 Years	5–9 Years
Lower carbon emissions, high efficiency and lower energy and heating bills will accelerate the deployment of CHP systems across Europe and the US.	H	H	H
Favourable CHP policies and incentives across Europe and the US will drive the demand for natural gas.	H	H	H
Well connected infrastructure across North America and Europe, and growing infrastructure investment will boost the adoption of natural gas.	H	H	M

Restraints	1–2 Years	3–4 Years	5–9 Years
Increasing natural prices have reduced the cost competitiveness for CHP, which reduces the demand for natural gas.	H	H	H
Falling electricity prices due to decentralisation and increased competition limit natural gas developments.	H	H	H

**Impact Ratings: H = High, M = Medium, L = Low**

### Key Market Trends

- Modernization and rehabilitation of existing boilers across the industrial segment:** Many industrial boilers which use wood as a feedstock for heating are now converting to natural gas for increased power and heat generation. This presents opportunities for modernization & rehabilitation of plants.
- Natural gas as an effective grid management solution:** The increase in renewables presents opportunities for natural gas as a backup generation system, as these plants are quick to start and provide backup to the grid.
- Efficient gas turbines with high adoption of digitalization:** Gas turbine OEMs are working to increase the efficiency of the systems and also increase the adoption of digital technologies into the system, which reduce the costs associated with operations and maintenance.

## Appendix F – Doral's Projects

#	Groups of projects	MW	Holdings
1	Israel - Small to medium PV projects	86.8	47%
2	Israel - Ground mounted PV projects	1,086.6	56%
3	Israel - Roofs and reservoir PV projects	200.493	28%
4	Israel - Wind, Biogas, Natural gas	44.62	63%
5	Italy - PV	447.2	80%
6	USA - PV and Wind	1,964.00	50%
<b>Total</b>		<b>3,829</b>	

## Appendix G – Team Bios

**Dr. Tiran Rothman** is an Analyst and Consultant at Frost & Sullivan Research & Consulting Ltd., a subsidiary of Frost & Sullivan in Israel. He has over 10 years of experience in research and economic analysis of capital and private markets, obtained through positions at a boutique office for economic valuations, as chief economist at the AMPAL group, and as co-founder and analyst at Bioassociate Biotech Consulting. Dr. Rothman also serves as the Economics & Management School Head at Wizo Academic College (Haifa). Tiran holds a PhD (Economics), MBA (Finance), and was a visiting scholar at Stern Business School, NYU.

**Almog Josef Sokolik** is an Analyst and Consultant at Frost & Sullivan Research & Consulting Ltd., a subsidiary of Frost & Sullivan in Israel. He has experience in valuation of public and private firms, research and market analysis obtained through positions at the Ministry of Finance - Department of the Chief Economist, and Ben-Gurion University - Laboratory for Judgment & Decision Making as research analyst. Almog holds a BA in Economics and Psychology.

**Ross Bruton** is a Senior Industry Analyst for Smart Energy Systems, in Frost & Sullivan's Energy & Environment practice. He has 10 years' experience authoring energy related reports, and analyzing technologies and companies. Ross holds a BSc Molecular and Biotechnological Sciences and a Post Graduate Degree in Marketing.

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