

## Solaer Renewable energies – Update Report

14.12.2021

Stock Exchange  
**TASE**Symbol  
**SOLR**Sector  
**Technology**Sub-sector  
**Cleantech**Stock price target  
**NIS 72.8**Closing price  
**NIS 34.2**Market cap  
**NIS 477.1 Mn**No. of shares  
**13.9 Mn**Average Daily  
Trading Volume  
**170 stocks**Stock Performance  
(since IPO)  
**-28.2%**

Expansion of the company's operations in EU - signing agreements in Italy and Spain; Acquisition of rights in projects in Spain with about 200 MW, and examination of the purchase of an additional 400 MW; price target remains unchanged.

**Solaer Renewable Energy (TASE: SOLR) was established in Israel in 2019. The company originated from 'Solaer Israel,' which was established in Israel in 2009 as a subsidiary of the Spanish group 'Solaer,' which deals with renewable energies. The company initiates, develops, builds, operates, and maintains renewable energy projects in Israel and Europe.**

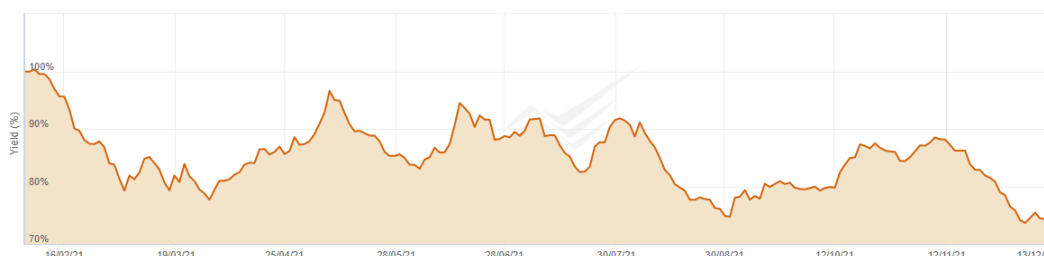
**In Q3 and the recent months of 2021, the company announced the following:**

- Solaer signed agreements to acquire the rights of several PV projects in Spain and Southern Italy.
- The company completed and connected projects in a number of countries.
- Signing of MoU with an Israeli institutional body and a European bank for investment and financing in the company's projects totaling 134 million euros. And advanced negotiations with a European investment fund for investment and funding in a cumulative amount of about 110 million euros.
- Entering into an agreement for the acquisition of rights in four photovoltaic projects in advanced development
- In Spain with a total capacity of about 200 MW and advanced negotiations for the purchase of additional projects in Spain with a total capacity of approx. 400 MW and a total of 12 solar parks with a total capacity of approx. 600 MW.

**Market and trends** - Investment in renewable energy globally hit a high of \$350 billion in 2020, with solar PV and wind power accounting for \$290 billion of the total. A decade of high investment is forecast as the business case for renewables becomes ever stronger. **The company aims to continue creating value by leveraging its strategic partnerships, high access to projects, active operation division abroad, and proven expertise in working with landlords in Israel and internationally.**

Year	Revenues* (000 NIS)	EBITDA* (000 NIS)
2021E	28,286	18,986
2022E	123,836	86,210
2023E	251,374	170,082

\*Represents 100% projects holdings



## Key events in the third quarter and the passing months of 2021:

- On December 12, Solaer (through its subsidiary) reported that it had signed two MoUs with an Israeli institutional body and a European bank for investment and financing, totaling about 134 million euros. The financing of the European Bank will be for the development of the projects. At the same time, the institutional body will provide a Maznin loan that the company will use to complete the equity in the projects alongside the capital investment of the same body. In addition, the company reported that it is in advanced negotiations with a European fund for an investment of about 110 million euros in the company's projects. The company also stated that it is examining the possibility of raising bonds.
- On July 28, the company's Board of Directors approved the acquisition of rights in 2 PV projects in Southern Italy with a total capacity of approx. 160 MW for EUR 5.6 million. The company expects to hold 47.4% of each project.
  - Gravina De Puglia: Total capacity of 140 MW, predicted to begin commercial operation in Q4 2023.
  - Ferrandina: Total capacity of 20 MW, predicted to begin commercial operation in Q1 2023. In August, Solaer completed the construction of the Alizarsun project, amounting to 50 MW, expected to be connected in the next few weeks.
- On November 23, the company signed agreements to acquire the rights in 4 PV projects for EUR 17 million (EUR 85 thousand per MW). The four projects have a total capacity of approx. 200 MW and are expected to reach the Ready to Build (RTB) stage by Q2/Q3 2022.
  - In addition, the company is in advanced negotiations with the third-party seller to purchase additional projects with a total capacity of approx. 400 MW, expected to reach RTB the same time as the above projects.
- Solaer is currently examining a 120 MW deal in Poland, along with additional investment opportunities.
- The company expects that its representative annual revenue will increase from NIS 46 million in 2021 to NIS 395 million in 2024.

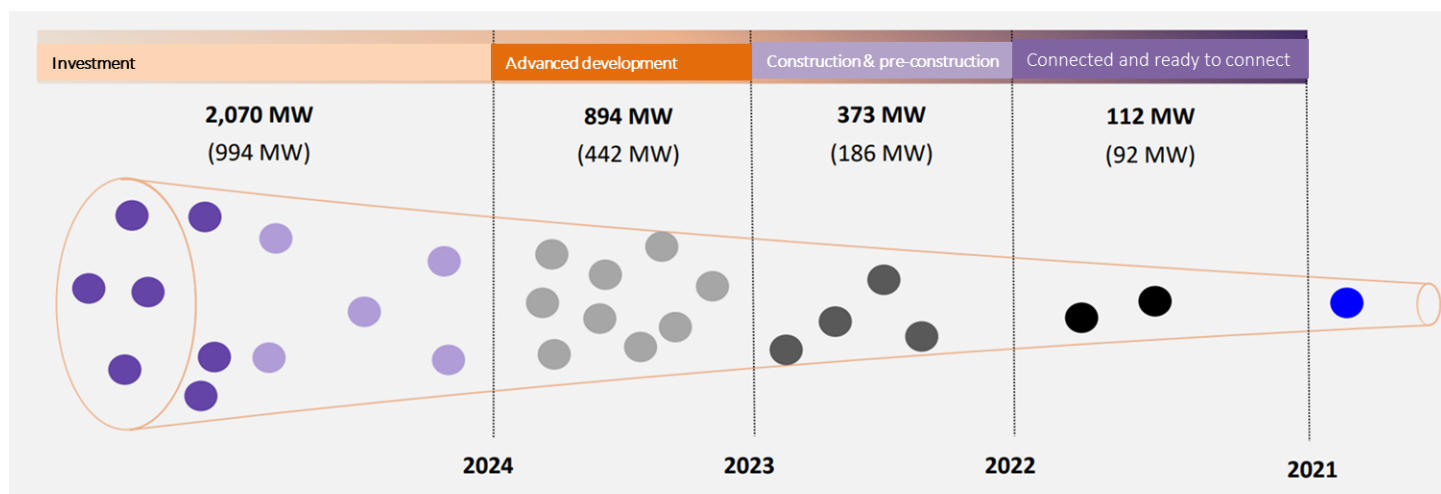
We see the above financial agreements as evidence of the company's financial strength and anticipate that these funding sources will allow the company to establish its backlog of projects in the next two years and connect 1.8 GW to the power grid by the end of 2023.

For additional information about the company and the valuation please read our initiation [report](#).

## 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. Solaer has successful experience across all steps and stages of renewable energy projects, including initiation, development, financing, construction, management, operation, ownership, and sale of assets. It has developed over 120 projects with an operational capacity of 3.45GW<sup>1</sup> under various stages of development, construction, and operation.

The company changed its strategy from a develop-to-sell to a develop-to-hold model, aiming to secure long-term income for the company from the possession of assets. Yet, Solaer will continue to examine the sale of minority shares to monetize part of its development gains. In addition, the company's strategy includes: initiating long-term projects, securing assets before the market reaches saturation, selectively selecting opportunities while analyzing all the risks, and developing a significant projects pipeline.



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

- Proven ability to develop complex and novel projects through all stages: initiation, financial closure, construction, and ongoing maintenance.
- Direct access to quality projects, along with growing projects pipeline.
- Local presence in the markets in which the company operates in Europe.

<sup>1</sup> The total number of projects as of this date, the scope of projects in commercial operation, construction, and preparation, and the company's goals for connected projects, construction, and preparation in Spain and Italy by the end of 2021, which include data on projects in Spain and Italy that have not been expanded and/or actually purchased.

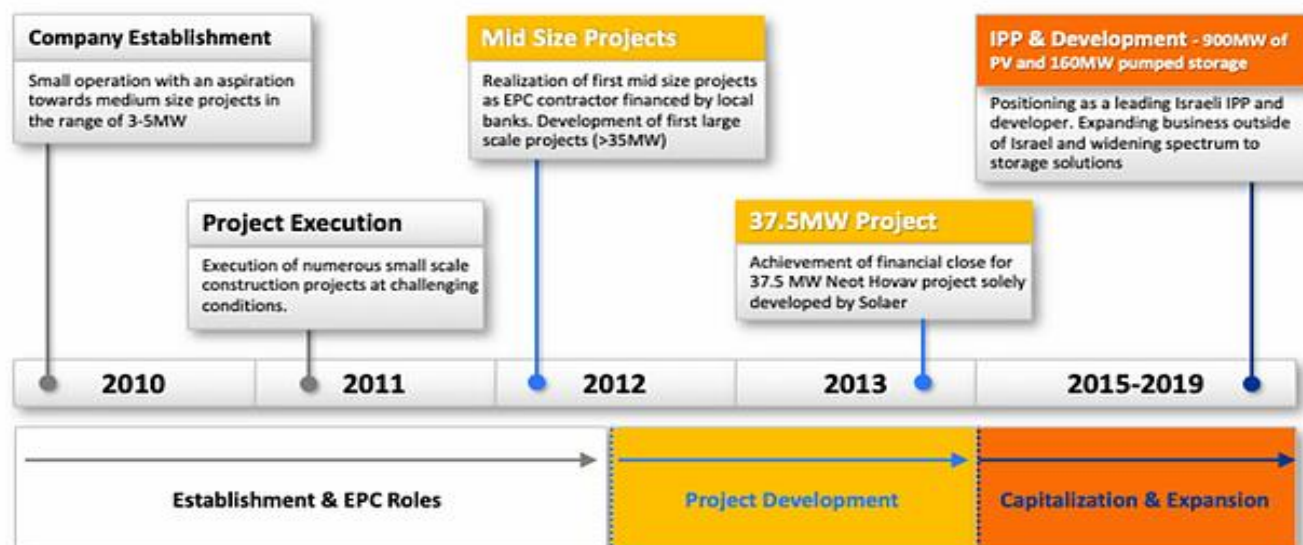
- Experienced professional and management teams enable the company to effectively realize projects in record time, from planning to financial closing to grid connection.
- Financial resilience and trust of financial institutions in Israel and around the world. Expertise in complex financial closing with Israeli and overseas financing organizations.
- Develop-to-hold business model.
- A pioneer in combining energy and water production.

The company's strategy is based on a develop-to-hold model and includes initiating long-term projects, securing assets before the market reaches saturation, selectively selecting opportunities while analyzing all the risks, and developing a significant projects pipeline.

**We forecast that by 2021 Solaer's projects' (representing 100% holdings) will generate revenues of NIS 28.3 million in 2021, and by 2022, revenues would amount to NIS 123.8 million.**

## 1. Company overview

Solaer Renewable Energy (TASE: SOLR) initiates, develops, builds, operates, and maintains renewable energy projects in Israel, and Europe. 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. It has developed over 120 projects with an operational capacity of 3.45GW<sup>2</sup> under various stages of development, construction, and operation (total accumulated sharer of Solaer is approx. 2 GW). Below is a timeline of the company from its inception in 2010:



Source: Solaer

With a mission to be a key contributor to independent green energy supply by developing smart production, storage, and distribution solutions, Solaer has teamed up with key market players, and developed a diversified portfolio of assets in key European markets with high credit rating. Solaer is in the process of further expansion in the European continent besides its Israeli operations. Solaer aims to own a portfolio with an operational capacity of 4 GW by 2025.

Solaer focuses on Solar PV technology and Pumped-storage hydroelectricity. Besides, Solaer has been exploring expansion opportunities in Agrophotovoltaics and hybrid projects in Europe.

<sup>2</sup> The total number of projects as of this date, the scope of projects in commercial operation, construction, and preparation, and the company's goals for connected projects, construction, and preparation in Spain and Italy by the end of 2021, which include data on projects in Spain and Italy that have not been expanded and/or actually purchased.

## Projects Pipeline\*

Project Stage	Capacity (Based on 100% Share)
Connected, Under construction, Pre-construction	485 MW
Advanced Development	894 MW
Early Development	2,070 MW
Total	3,449 MW

\*based on company's presentation, Q2 21

## ISRAEL ACTIVITY

Solaer started its operations in Israel as a contractor for small-sized projects. It has since grown multifold, developing large-scale projects, with 467 MW in its project pipeline. It has created the biggest net-metering project in Israel in Ayit, a 250 MW Solar PV and pumped-storage hydroelectricity project aiming to serve the Arava / Eilat-Eilot region, turning it into an independent micro-grid. The project is estimated to cost approx. EUR 200 million, and the commercial operation is expected to begin in 2025.

### LIST OF SOLAER'S PROJECTS IN ISRAEL

37.5 MW large scale project financed by Deutsche Bank
Renewable Energy supply to 75 Schools in Israel
3 MW Dimona PV & Construction project
45000 Sqm largest Rooftop PV project (EUR 8 million)
5 MW PV rooftop project (EUR 9 million)
Biggest Net metering project in Israel (EUR 3 million)

## EUROPE ACTIVITY

Solaer has actively participated in PV development projects in Spain (756 MW in project pipeline) and Italy (952 MW in project pipeline) and expanded into other markets. In November 2020, Solaer achieved financial close for their 50MW Alizarsun PV Project in Zaragoza, Spain. Solaer's activities are primarily concentrated in Spain and Italy, through the local presence of its subsidiary, a Spanish company controlled by Solaer. Its involvement in the development of a 50MW project bodes well for future market expansion.

## 2. Technology overview

Solaer, with over a decade of experience in Solar PV and pumped storage projects, is in a prime position to contribute to Israel's renewables goals.

### **SOLAR PV + PUMPED STORAGE**

Combining Solar PV with Pumped storage ensures grid stability. Energy Storage in this system is in the form of water. Pumped storage hydropower (PSH) currently accounts for 94% of installed global energy storage capacity and nearly 96% of the energy stored in grid-scale applications. Pumped storage is a cost-effective storage technology when combined with other renewable sources like wind and solar PV to minimize the impact of variability in output on the grid.

### **AGROPHOTOVOLTAICS**

Solaer is well set to capitalize on opportunities in Agrophotovoltaics. Increased demand for power generation due to population growth across the globe has resulted in land-use competition. Traditional PV systems require land management and associated acquisition costs, which has led to an innovative solution that enables dual land-use systems to combine the production of food and energy using agro photovoltaic (APV) systems. APV, or 'dual-use' farming, uses arrays of elevated solar panels over crops to maximize land use and productivity. According to one of the leading institutes in this space, a wide range of crops, including potato, grapes, fruits, spinach, ginseng, beans and legumes, onions, cucumber, and zucchini, are suitable for APV installations.

### **ENERGY + WATER**

Solaer is in the feasibility phase for several projects incorporating water production into energy generation. Solar power can be harnessed to power mini drinking water supply systems and desalination plants. Combining PV plants with water supply optimizes the use of resources.

### **ENERGY MANAGEMENT**

Solaer focuses on maximizing efficiency through smart energy management, novel engineering, and technological solutions in its PV and Storage projects and other renewable projects.

### 3. Markets overview

#### Global renewables market

Climate change is one of the greatest concerns for governments worldwide, and achieving de-carbonization in the power sector is key to tackling the issue. While hydropower has been a major source of energy generation for decades, solar and wind energy have been gaining momentum, and the Paris agreement has propelled the growth further. Investment in renewable energy globally hit a high of \$350 billion in 2020, with solar PV and wind power accounting for \$290 billion of the total. The key drivers over the next 9 years in the market are the growing concern for tackling global climate change, declining solar and wind generation costs and project costs accelerating new deployments, increased traction for hybrids in Variable Renewable Energy (VRE) offering horizontal integration and capability building opportunities, and increasing digitization across the renewable energy market. The key restraints in the same time span include the increasing competitive intensity, integration issues, and withdrawal of government subsidies and support lowering growth rates.

#### ISRAEL RENEWABLES MARKET – OVERVIEW AND OUTLOOK

The reduction of carbon emissions and promoting renewable sources has been one of the primary goals of Israel's Ministry of Energy, in tandem with global goals, and the official target of renewable sources of energy by 2030 was increased to 30% from 17% in 2020. The target increment is combined with a commitment to phase out the use of coal for power generation by 2030. This measure is expected to decrease air pollution from the power sector by 93% and Green House Gas (GHG) emissions by 50%, according to Israel's Energy Minister. At an outlay of NIS 80 billion (USD 22 Billion), this plan aims to use solar installations to meet 80% of peak energy demand in Israel, with the forecast of 15GW of solar added in the next decade.

As of 2021, Israel is self-sufficient in terms of energy production. Nevertheless, the current 3 – 4% increase in the size of the installed power base is expected to be insufficient given the expected population growth from 9 million in 2019 to 13 million in 2030. The current installed capacity of 17.7GW (2019) will have to grow by 3.2x to 58.1 GW by 2030 to meet the growing demand and to meet renewable energy targets. Israel is committed to achieving its target of 30% of electricity production from renewable sources. Solar power is expected to contribute 90% and wind, biomass, and hydropower are expected to comprise the rest.

To support the transition to realize the 2030 vision, the government is putting major systems and regulations in place, including, among many, massive development of the electricity grid for the integration of solar



energy, promoting significant investment in R&D to upgrade energy storage, and implementing tools for developing a stable electrical system capable of handling sharp changes in production scale. Israel's cumulative Installed capacity of solar PV is projected to grow at a steady pace from 4.7 in 2021 to 15.7 in 2030. Further, to enhance grid reliability, a total storage of 6.5 GW is estimated to be installed by 2030<sup>3</sup>.

Yield can be maximized by installing floating PV on pumped storage facilities. Israel's first floating solar PV with a capacity of 480 KW began operating in 2020. Contracts for solar PV and storage capacity of 609 MW were awarded to seven bidders across 33 projects which are expected to deliver power to the Israeli grid by July 2023.

### European Solar PV Market

The EU adopted the Renewable Energy Directive (RED II) in December 2018 to achieve a collective, binding target of 32% renewable energy by 2030. There is now a proposal to increase to 38 – 40%. Solar PV capacity witnessed 11% growth Y-o-Y during the pandemic in the region, with 18.2 GW installed. An average annual addition of 18.5 GW in the EU is projected by Frost & Sullivan based on the National Energy and Climate Plans (NECPs) for the next decade to meet 2030 EU targets. The NEXT Generation EU's economic recovery plan has earmarked up to 37% (~ EUR 27-30 billion) of funding for investment related to climate change.

The EU's Regional Development and Cohesion Policy outlines five areas of investment priorities of which a cleaner and greener Europe are the top two objectives, accounting for 65 – 85% of the European Regional Development Fund (ERDF) and Cohesion Fund between 2021 and 2027. A further 6% is dedicated to sustainable urban development fueling the market for renewables.

Given that 90% of Europe's rooftop space is unused, solar PV's potential to contribute to the renewable targets is considerably higher than other technologies. Total solar PV installed capacity in Europe is projected to grow from 155.4 MW in 2021 to 318.7 MW in 2030. The countries with the highest amount of installed capacity in 2020 are Germany (54.6 MW), Italy (21.3 MW), Spain (13.3 MW), the U.K. (13.9 MW), and France (10.9 MW). In 2030, Frost & Sullivan estimates the following capacities: Germany with 93.1 MW, France with 40 MW, Italy with 48.5 MW, the U.K. with 36 MW, and Spain with 35.2 MW.

The UK's legally binding net zero target for 2050 will require significant policy support. According to the Solar Trade Association of the UK, while the UK has demonstrated abilities to deploy up to 4 GW per annum, there

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<sup>3</sup> [https://www.gov.il/BlobFolder/rfp/shim\\_2030yaad/he/Files/Shimuah\\_yaad\\_2030n\\_work\\_n.pdf](https://www.gov.il/BlobFolder/rfp/shim_2030yaad/he/Files/Shimuah_yaad_2030n_work_n.pdf)

are significant difficulties to contend with both from a regulatory and operational perspective. Frost & Sullivan's conservative estimate is at 2.2 GW per annum – still a considerable increase. The EU proposes introducing the 'Fit for 55' package in June 2021, wherein GHG emission reduction targets are proposed to increase to 55.0% from 40.0%. It further aims to simplify administrative procedures for utility-scale PV by introducing universal guidelines for the region and scrapping construction permits for rooftop PV installations. Incentivizing C&I PV installations is also on the agenda. They have also established a EUR 59 billion annual grid modernization package, including a focus on digitalization and cybersecurity. The proposed 'renovation wave' scheme aims at renovating 35 million buildings to reduce emissions by 60% by 2030.

## SPAIN

Growth in corporate PPAs drove the solar PV market in Spain in 2020. Solar PV's share in total electricity demand peaked at 13.2% in May 2020. Like the other member states of the EU, Spain released its Integrated National Energy and Climate Action Plan in 2020 aimed at achieving decarbonization, energy efficiency, energy security, and promoting innovation and competitiveness in the market. Spain aims to become carbon neutral by 2050 and aims to increase the share of renewables by 42% in energy end-use by 2030 and increase energy efficiency by 39.5%. The plan foresees solar PV installed capacity of 39GW by 2030, contributing 25.7% of the renewables mix. It has also set a new target for storage development at 6GW with 2.5GW in battery storage.

While Spain's baseline scenario pegs its solar PV installation achievements at 48.0% of its target of 39.1 GW, Frost & Sullivan estimates a conservative annual capacity addition of 2.2 GW. Its total solar PV installed capacity is projected to grow from 15.5 GW in 2021 to 35.2 GW in 2030.

## ITALY

Italy aims to harness 55.0% of its total electricity demand from solar energy by 2030. Solar power is gaining share as a percentage of total renewable installed capacity in a market that had been dominated by hydropower in the past. With its current solar PV installed capacity of 21.3 GW, an added capacity of 31 GW is expected over the next decade with annual capacity addition of at least 2.7 GW. Italy is one of the two largest solar power markets in Europe. Its total solar PV installed capacity is projected to grow from 24 MW in 2021 to 48.5 MW in 2030. Key regions within Italy are Apulia, Sardinia, Lombardy, Veneto, and Emilia-Romagna. 35.0% of capacity additions were through projects of 1MW or higher.

## BULGARIA

It is believed that Bulgaria's target of 3.2 GW in solar PV by 2030 doesn't reflect its true solar potential, which is high in southern Bulgaria. At least 200 MW of annual capacity addition is expected to be deployed to achieve Bulgaria's low PV target over the next decade. Key hotspots in Bulgaria known for high solar irradiation are Blatets, Stambolovo and Drachevo, and Tsaratsovo. Its total solar PV installed capacity is projected to grow from 1.3 GW in 2021 to 2.9 GW in 2030.

## POLAND

Poland added more than 1 GW in solar in 2020 and remains one of the high growth markets in Eastern Europe with an installed capacity of 3.6 GW in PV. It aims to meet 23.0% of electricity demand through renewables by 2030, which according to NECP, requires the installation of 7.3 GW in solar PV. Poland's low ambition for 2030 despite its high solar potential, low visibility with respect to its auctions, and barriers to PPAs, are the key challenges faced by market participants. Poland's total solar PV installed capacity is projected to grow from 3.9 GW in 2021 to 6.6 GW in 2030.

## OPPORTUNITIES IN PUMPED STORAGE

The International Renewable Energy Agency (IRENA) and International Hydropower Association (IHA) have entered into a formal agreement in February 2021 to accelerate the financing and development of **sustainable hydropower**, which will involve initiatives aimed at promoting clean storage and investments between USD 22 billion – USD 55 billion per year up to 2030 which could primarily be achieved by combining VRE with pumped storage hydropower PSH. Experts comment that floating panels can increase the capacity factor of a hydropower plant by 50 – 100%, where the capacity factor is the ratio of actual power generated to the maximum generation capacity of the plant. Besides, floating panels can absorb 7%-14% more energy than land installations due to the cooling effect of water. Installed capacity of hydropower globally is projected to grow from 1,360 GW in 2021 to 1,576 GW in 2030. More than 600,000 sites globally have been identified by Australian Researchers as suitable for sustainable, closed-loop pumped-hydro energy storage projects across the globe. The IHA estimates clean energy storage capacity additions of 78GW by 2030, and Frost & Sullivan estimates the market to register a CAGR of 4.0%.

## PSH Storage Capacity Additions – Projections

Clean PSH allows stability through frequency control, voltage regulation, and reserve power, providing a hedge against intermittency of variable renewable energy sources and reducing carbon emissions. PSH capacity addition is projected to grow from 174 GW in 2021 to 246 GW in 2030. There are currently numerous planned/announced projects throughout Europe, including in the U.K., Poland, Italy, and Morocco. **The Ministry of Energy of Israel plans to procure 800 MW of pumped storage, out of which 640 MW are expected to be built in the coming years.**

## AGRO-PHOTOVOLTAICS

A total of 2,200 APV plants are estimated to be under operation worldwide, with a total capacity of 2.8 GWp. Research shows southern Mediterranean region in Europe is the most suited in the region for APV installations. A total of 45 MWp has been tendered in France as part of an APV financial support scheme in 2017. Several research projects are ongoing in Southern Europe (Greece, Spain and Italy), to assess the potential of APV in improving yields of various crops, and on animal farming.

## EUROPE - WIND MARKET OUTLOOK

The cumulative installed capacity of wind energy stood at 220 GW with the addition of 14.7 GW in 2020. 80.0% of the wind installations were onshore. The Netherlands accounted for 13.0% of the new addition in 2020, with 1.5 GW of its 1.98 GW added capacity in offshore wind. Norway (1.5 GW), Germany (1.4 GW), Spain (1.4 GW), and France (1.3 GW) led the installation of onshore wind farms.

The European onshore market is expected to remain stable, with annual installations expected at a level of 12-13 GW until 2030. The annual onshore installations could go up if governments adopt clear and ambitious National and Energy, and Climate Goals and resolve issues related to land and environmental impacts. Frost & Sullivan expects the increase in offshore installations to continue with an annual average of 6 GW until 2030. Between 2020 and 2024, onshore installations are expected to reach 77.6 GW at an average 15.5 GW/Year rate. The European cumulative wind capacity is expected to reach ~414 GW by 2030. The European countries with the highest total onshore and offshore wind cumulative installed capacity in 2020 were Germany (62.6 GW), Spain (27.2 GW), and the U.K. (24.1 GW), followed by France and Italy. The top 5 countries in terms of wind installations account for 65.1% of total installations in Europe, with UK (10.4 GW) and Germany (7.7 GW) being the hotspots for offshore wind. Poland has about 6.6 GW of onshore wind installed. Key players in the

European wind market include Enercon, Enel, EDF Renewables, Vestas, RWE, Windbud, Windpower Poland, QAir Polska and OX2.

## STORAGE SYSTEMS

One of the key outcomes of a decade of strong renewable investment has been high growth for energy storage solutions. Improved regulatory frameworks, incentive programs, declining projects costs, and revenue opportunities from auxiliary grid services have all contributed to market growth. With increasing growth in wind and solar, there is substantial business opportunity for battery storage solutions. Support from national governments and EU institutions should help shore up investor confidence. The larger European Energy Storage Systems market has witnessed remarkable growth in the last ten years. Projects with a storage capacity of 5.7 GW were announced in 2020 compared to a meager 9MW in 2010. About 1.7 GW is operational.

## 4. Competitive landscape

There is 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. The last category is comprised of B2G players that dominate the large governmental projects arena and have significant portfolios. These prominent players include Solaer, Energix , and Enlight. Other key players who were recently awarded projects in Israel are SoleGreen, Ellomay Capital, EDF Energies Nouvelles Israel Ltd, Meshakim & Partners, Invenergy Israel LLC, OPC Energy LLC, Edelcom Ltd, Edeltech Ltd, and Shikun & Binui Energy Ltd. International players in Israel include China National Technical Import and Export Corporation (China), Power China Resources (China), Solarpack (Spain), Cobra Instalaciones Y Servicios (Spain), and Scratec Solar (Norway).

## COMPETITIVE LANDSCAPE IN EUROPE

Competitive intensity is much higher in Europe in all renewable technologies. Intelligent design, yield efficiency, and add-on services, combined with cost competitiveness, are the key differentiating factors for market participants. Key winners of large scale solar and wind contracts in Europe are Engie (France), Juwi (Denmark), EDF Energy Nouvelles (France), Scatec Solar (Norway), Neoen (France), Enerparc (Denmark), X-Elio (Spain), and Abengoa Solar (Spain) apart from local players.

## Appendix #1: About Frost & Sullivan

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