2022 Sustainability & Impact Report

ecofin

Global Renewables Infrastructure Strategy

> Ecofin has a long history of sustainable investments. Thematic-focused opportunities and risk factors have been integrated into the investment teams' processes since the founding of the firm in the 1990s, well before ESG became a focus for most investors. Our investment professionals have always been our subject matter experts and continue to integrate financial and non-financial factors into their evaluation criteria to drive returns and thematic impact for investors.

Where our philosophy stands apart from other managers is our conviction that impact and responsible investing should not focus on those companies that have already completed a transformation. We believe real change happens when companies undertake a path of improvement and we stand ready to support and encourage those paths. It was based on our philosophy of impact investing, that we created our Sustainability & Impact (S&I) Policy. By developing a set of guiding principles for our sustainable and impact investing practices, we have outlined a systematic process that allows for consistency and accountability. We endeavor to demonstrate how our commitment to positively impacting clients and communities will continue to optimise investor returns, while maximising the measurable impact of their investments.

The goal of this report is to show the societal and environmental impacts that result from having an investment driven, thematically focused and sustainable strategy. We want to create a repeatable framework for reporting that includes both quantitative and qualitative components. The firm's Guiding Principles for Sustainability and Impact reflect our desire to maximise the measurable impact of our investments, with accountability, transparency and integrity. Those guiding principles are:

1. **Investment Driven**: We seek to provide strong, long-term risk-adjusted returns and differentiated sources of income for our clients
2. **Thematic Focused**: A proven track record and expertise of investing in essential assets and companies with long-term growth profiles
3. **Sustainability Minded**: A systematic approach that incorporates ESG into assessing the sustainability of business models to limit downside risk and capture forward-looking opportunities
4. **Actively Engaged**: Utilise our long-standing market reputation to engage with portfolio companies and investments in an effort to drive continuous improvement in their sustainability practices and metrics
5. **Impact Oriented**: Strive to make positive societal and environmental impacts by aligning definitive goals with measurable outcomes, and accountability with transparency reporting

The Sustainability & Impact Team works closely with the investment teams and across the firm to carry out the key goals and five guiding principles with an authentic, credible and systematic approach. We work to identify data and reporting gaps, areas for on-going training, and to assist with the implementation of the S&I Policy.

We are excited to publish these reports to further conversations with investors around our intentionality, implementation, and outcomes. With the rapidly changing environment surrounding sustainability, ESG and impact, we have worked to implement best practices in reporting but embrace a culture of continuous improvement and are excited to see future reports continue to evolve. We envision each future report will be more comprehensive, data driven, and informative than the last and we welcome feedback from investors and peers on ways to enhance our reporting.

Warm regards,
The Sustainability & Impact Team

Who we are

STRATEGY INVESTMENT TEAM

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Portfolio Manager and Managing Director

Matthew Breidert
Senior Portfolio Manager and Managing Director

LISTED EQUITIES INVESTMENT TEAM

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Portfolio Manager and Managing Director

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Senior Portfolio Manager and Managing Director

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Sustainable Investment Strategist

Michael Perry, CFA
Investment Analyst and Director

SUSTAINABILITY & IMPACT TEAM

Greg Murphy
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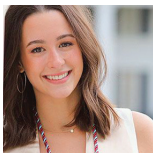

Emma Kurtz
Analyst

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Section One

Report Overview

The world needs investments that provide solutions for global challenges, especially in times of crisis. For the first time we are creating sustainability & impact reports for each of the thematic strategies to tell the stories of how the investments in each of our thematic strategies are providing critical solutions and furthering the objectives of the United Nations Sustainable Development Goals (SDGs).

The first section of the report discusses our approach and the reasons why reporting on these topics is so essential.

The body of the report introduces the investment theme that underpins our Global Renewables Infrastructure strategy. We believe the transition to a more circular, lower carbon economy is creating significant investment opportunities. We describe how our investment theme is positioned both to enable and benefit from these changes. We also map the investment theme against the UN Sustainable Development Goals.

Mapping positive impact is only the first step. Active ownership is fundamental to the investment philosophy and process and is a key part of the sustainable proposition delivered to investors. Active ownership can take various forms such as engagement and proxy voting. In section six, we share an engagement case study and summarize our proxy voting and engagement activity.

The last section of the report attempts to provide a wider assessment of the environmental, social and governance (ESG) factors we evaluate when making investments. Where possible, we have sought to provide quantitative and qualitative discussions, as well as examples of the impacts and progress made by our investments.

The world is in a period of enormous change. Investors like you and asset managers like us have important roles to play in providing solutions that support positive social and environmental outcomes. We work hard to win your trust and support in the investments that we make. We hope you find this report helpful as you evaluate your goals.

> Of all the fuel that industrial companies use for energy, we estimate that almost 50% could be replaced with electricity using available technology.

McKinsey & Company, May 28, 2020 "Plugging in: What electrification can do for industry"

Section Two

Our approach

Our investment proposition to investors is borne from the belief that societies need to accelerate the transformation to a greener, decarbonised and more sustainable economy. We firmly believe that addressing climate change through decarbonisation and circularization of the economy is not only a necessary condition for the preservation of global living standards for the future, but also represents a once in a generation investment opportunity that will deliver compelling risk-adjusted investment opportunities over the medium and long term on the back of growing investments and shifting consumption patterns.

Our Global Renewables Infrastructure ('GRI') strategy invests in companies that develop, own and operate low-carbon power generation assets and ancillaries. It focuses on companies that are gaining market share as economies and companies transition from fossil fuel to renewable energy sources. In most markets, the businesses and assets the team invests in are regulated or contracted, providing a good degree of predictability for returns and cash flows. This visibility extends from a few years to 20 years, depending on the jurisdiction. Given the strategic importance of the renewable sector, there is no indication this operating framework will change, especially in a context where significantly more investment by the private sector is required going forward. As such, the portfolio consists of companies that grow faster than the market and have attractive returns and predictable cash flows, a combination that we expect to provide outperformance over time.

For more than a decade, the analysis of ESG factors has been an integral part of our investment analysis and decision-making process. In 2009, Ecofin was awarded its first environmental mandate from the largest sovereign wealth fund in Europe, helping us further integrate ESG, but also building our understanding of sustainability as a source of durable wealth creation and organising our engagement to deliver impact as a key commitment to investors.

Today, our GRI strategy approaches ESG in a way which is both flexible and in-depth, and predominantly focuses on positive selection rather than negative screening. This means that our investment decisions are at all times informed by a forward-looking view on each company's ESG profile, which reaches beyond the (often limited) insight that sustainability metrics and ESG ratings can provide, by relying on our proprietary assessment of the company's strategic priorities and capital allocation.

This report also provides a look at our ESG assessments for the ten largest holdings in the strategy's portfolios as a way to illustrate what these companies do and the factors we consider when making investments.

Section Three

Our affiliations

Signatory of:

- Our parent company is a signatory to the United Nations Principles for Responsible Investment (UNPRI), the leading global network for financial industry participants and investors who are committed to integrating ESG considerations into their investment practices and ownership policies.

- Ceres Foundation's Investor Network (Ceres), which is designed for organisations focused on sustainability and climate action to work together to share best practices and research. From our Ceres affiliation, we were able to join the Net Zero Asset Managers Initiative which is a group of global investment managers who have pledged to support the goal of net zero emissions by 2050.

- We are a member of Carbon Disclosure Project (CDP) which is a not-for-profit that runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. We are also active in the CDP Non-Disclosure Campaign which actively engages companies that have received the CDP disclosure request on behalf of investors but have not provided a response.

- Task Force on Climate-Related Financial Disclosure (TCFD). The TCFD is committed to market transparency and stability. We believe that better, more transparent and comparable, information will allow companies to incorporate climate-related risks and opportunities into their risk management and strategic planning processes. As this occurs, companies' and investors' understanding of the financial implications associated with climate change will grow, empowering the markets to channel investment to sustainable and resilient solutions, opportunities, and business models.

- Our stewardship policies statements were designed to be in-line with the ICGN Global Stewardship Principles, which is an internationally recognised framework for investors to implement their fiduciary obligations on behalf of clients and beneficiaries.

- Global Impact Investors Network (GIIN) is a champion of impact investing, dedicated to increasing the scale and effectiveness of impacting investing around the world. The GIIN seeks to further the impact investing industry by providing measuring and reporting infrastructure, education, and research.

> Projections show that in 20 years there will be between 300 and 500 million electric vehicles on the roads.

Automotive World, November 23, 2020 "Risky business: the hidden costs of EV battery raw materials

Section Four

Introduction to the investment theme

The climate modeling work that Syukuro Manabe and Klaus Hasselmann started conducting in the 1960s & 70s was based on a simple premise that was also documented on August 9, 2021 by the UN Intergovernmental Panel on Climate Change (IPCC) which published a report of nearly 4,000 pages that addressed the most up-to-date physical understanding of the climate system and climate change, read the full report here.

The simple premise understood by both the models of Manabe and Hasselmann as well as the IPCC report is that: "There is a near-linear relationship between cumulative anthropogenic CO2 emissions and the global warming they cause."

What that means is that every ton of greenhouse gas emitted heats up the atmosphere a little bit while every ton avoided prevents heating, and any greenhouse gases removed reverses warming.

Scientifically establishing that CO2 and temperature travel in lockstep is a key tool in establishing international treaties around emissions such as the 2015 Paris Agreement and has been instrumental in gaining traction around the world for a push to net zero emissions by 2050.

As the world pushes towards a lower carbon future, it appears obvious that the effort to transition our economy and society from the carbon-intensive present to a low-intensity future will have rippling ramifications across every part of our economy and society.

Solving problems has always been the basis for building good businesses and solving the problems around emissions will be no different. Like the technology boom spawned by the internet over the last 25-30 years, the next 30 years will be dominated by new investment, advances, and technology around reducing emissions and making our planet and our place on that planet more sustainable.

Our Global Renewables Infrastructure strategy attempts to identify and invest in these opportunities, and it does so primarily through a singular investment theme:

Electrification: The power sector is undergoing a profound transformation driven by the decarbonisation and electrification of energy demand. Utilities are at the forefront of this multidecade transition. By adapting and, in many cases, substantially overhauling their business models to accommodate new greener technologies and decentralised power sources, utilities are bound to be major beneficiaries of secular growth and attractive returns on significant capital investments.

Electrification:

Traditional energy sources like natural gas and oil are being phased out in favour of cleaner and renewable energy, and electricity is taking a greater share within global energy markets. Of the energy market globally, electricity has around a 20%[1] market share today, and we believe this will double over the next 20 years.

The electricity market will double because there are four big verticals pulling on electricity that are ultimately tied to renewable energy. These factors include the decarbonisation of supply chains; the emerging prevalence of electric vehicles; green hydrogen, which we believe will become the precursor to decarbonising heavy industry; and utilities which are decarbonising rapidly, as quickly as technology and infrastructure permits.

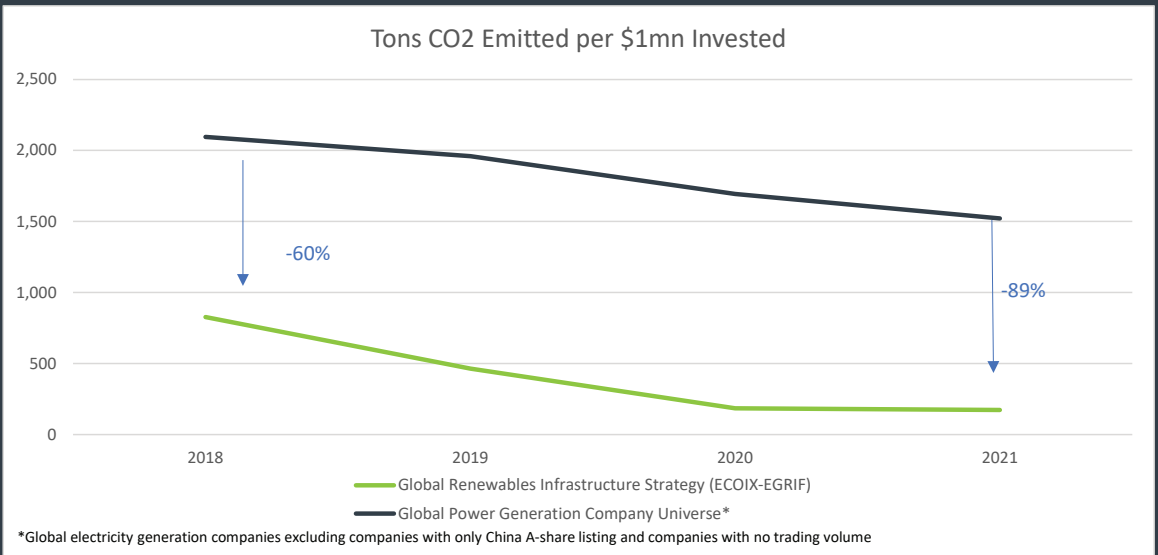
Utilities are at the forefront of this multi-decade transition. By adapting and substantially overhauling their business models to accommodate greener technologies and decentralised power sources, utilities are likely to be major beneficiaries of secular growth and attractive returns on significant capital investments.

Over the past decade, utilities groups have started to move out of commodity-driven businesses to focus on a combination of regulated and fully contracted asset-backed services. Growth drivers include the acceleration of development of renewables and the necessity to upgrade power grid infrastructures to accommodate increasingly intermittent and distributed generation and to accomplish efficiencies. Valuations do not generally reflect increasingly more predictable and sustainable cash flows, secure and above market average dividend yields, and generally solid regulatory frameworks.

Our Global Renewables Infrastructure strategy identifies global developers, owners and operators of clean electricity generation to capture the structural growth in renewables. These companies will grow faster than the broader energy industry as renewables grow faster than electricity demand, which is itself taking share from other forms of energy.

[1]The Wall Street Journal-The Electrification of Everything: What You Need to Know"

In partnership with CarbonAnalytics, Ecofin annually updates a global proprietary database of power generation companies with detailed CO2 emissions by source of power and by company. The following graph represents the carbon emissions of the GRI portfolio vs the universe of power generation companies. Reporting carbon emissions per million dollars invested is a common way to normalize carbon reporting to allow for comparison between portfolios and benchmarks of different sizes.



PORTFOLIO IMPACT

We have a proprietary global database of power generators with generation data by plant and by energy source

Decarbonisation:

The following filters are applied to identify companies with lower CO_2 emissions and a higher percentage of clean electricity generation than their peers:

1. CO_2 emissions filter – investee companies' emissions must be at least 10% lower than the relevant grid
2. Coal filter – exclusion of all companies with over 30% of generation from coal

72% cleaner than the MSCI World Utilities Index per $1 invested:

168 tCO_2/$mn invested vs 606 tCO_2/$mn invested for the MSCI World Utilities Index, hence a reduction of 438 equivalent to 398 return flights NY-LA in economy class

63% cleaner than the respective grids in which the assets of the companies we invest in are located

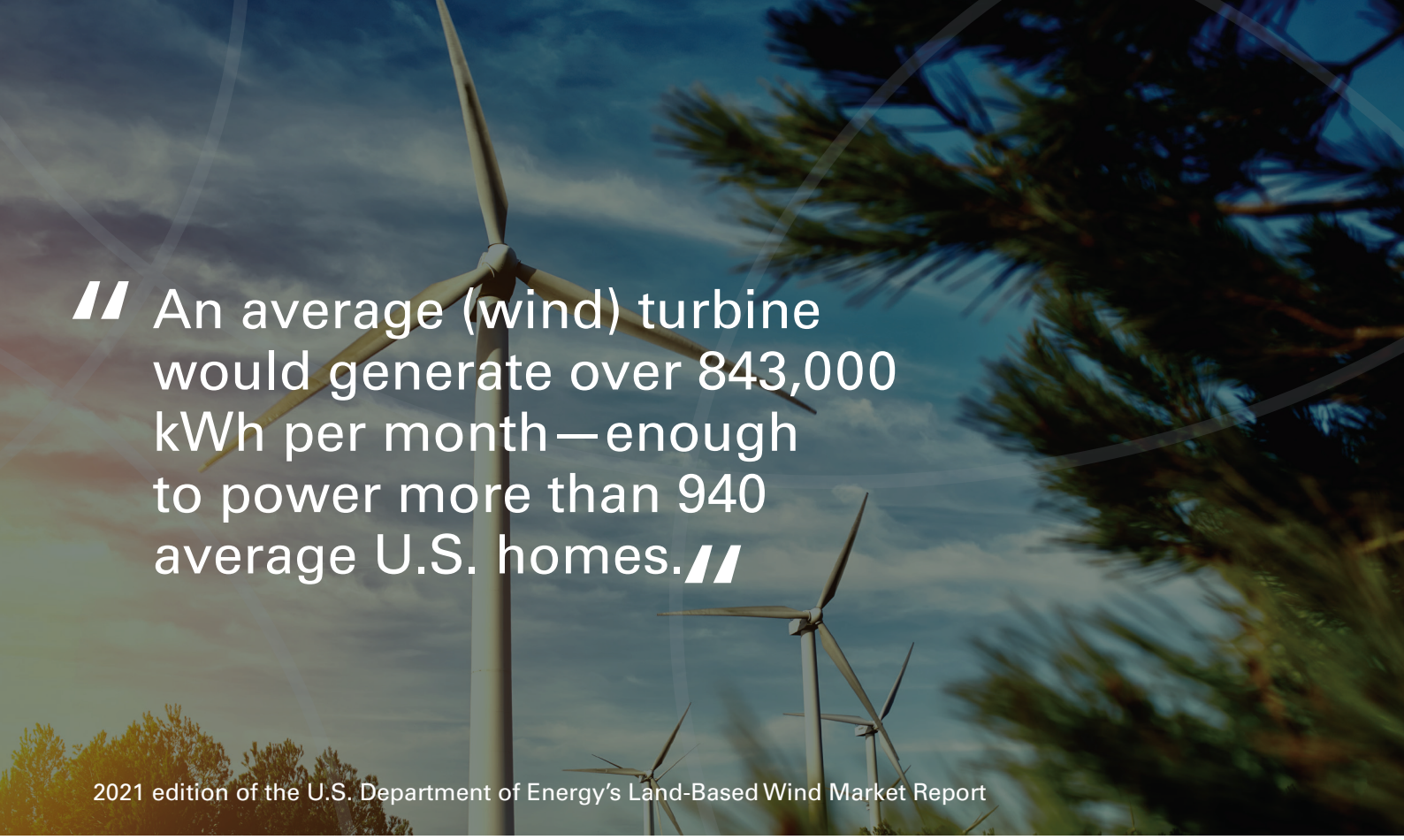
65.1% generation from renewables

saving 438t CO_2 is equivalent to planting 22,187 trees

Impact

- Clear calculable impact in terms of CO_2 emissions avoided
- Effective displacement of dirty electricity generation by the cleaner generation of portfolio constituents

As of 3/31/2022. Source: Ecofin Advisors Limited in partnership with Carbon Analytics



"An average (wind) turbine would generate over 843,000 kWh per month—enough to power more than 940 average U.S. homes."

2021 edition of the U.S. Department of Energy's Land-Based Wind Market Report

Section Five

Investment theme SDG alignment of top ten holdings

Investment Theme	Portfolio Example	Thematic Focus	Thematic Outcomes	Thematic Impact
Electrification	• Acciona Energia • China Longyuan Power Group • Drax Group PLC • Edison International • EDP – Energias de Portugal S.A. • ERG S.p.A • Exelon Corp • NextEra Energy, Inc • Terna S.p.A. • Transalta Renewables	"Electricity Wins" • Captures the growing electricity market as a piece of the broader energy market • Renewable growth within electricity generation; good for the environment – good for the company	• Measurable reduction in GHG and other pollutants in comparison to local grid. • Continued replacement of coal and other fossil fuel generating plants with renewables. • Fewer coal plants in a grid equates to fewer GHG and particulate emissions and • Fewer tons of coal being mined. • Providing cheap and abundant electricity to consumers and industry. • Economic growth and higher employment	3 GOOD HEALTH AND WELL-BEING 7 AFFORDABLE AND CLEAN ENERGY 8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 11 SUSTAINABLE CITIES AND COMMUNITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION

Section Six

Active ownership

Active ownership is fundamental to the investment philosophy and process and is a key part of the sustainable proposition delivered to investors. Active ownership can take various forms such as engagement and proxy voting. Our overall philosophy is to promote better ESG practices and seek positive change on many levels, fostering long-term value creation for our investors.

Company Description: Algonquin Power & Utilities Corp., through its subsidiaries, owns and operates a portfolio of regulated and non-regulated generation, distribution, and transmission utility assets in Canada, the United States, Chile, and Bermuda. It generates and sells electrical energy through non-regulated renewable and clean energy power generation facilities. The company also owns and operates hydroelectric, wind, solar, and thermal facilities with generating capacity of approximately 2.1 gigawatt; and regulated electric, natural gas, water distribution, and wastewater collection utility systems. It serves approximately 306,000 electric connections; 371,000 natural gas connections; and 409,000 regulated water distribution and wastewater collection utility systems in the states of California, New Hampshire, Missouri, Kansas, Oklahoma, Arkansas, Georgia, Illinois, Iowa, Massachusetts, New York, Arizona, Texas, and the Province of New Brunswick. The company was incorporated in 1988 and is headquartered in Oakville, Canada.

Engagement Issue: Ecofin maintains a proprietary CO2 emission database that allows us to compare global power producers based on their emission profiles relative to each other and relative to their respective grids.

We engage regularly with companies and show companies where they rank in our database and discuss areas where they can and should improve. Some years, Algonquin was very close to being uninvestible due to its pace of decarbonization.

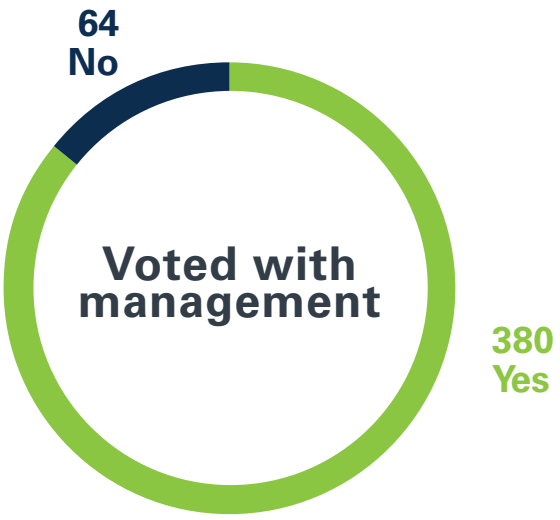
Engagement Objective: We desire continued improvement in Algonquin's emissions and sustainability profile, including the publication of a sustainability report.

Scope and Process: We met regularly with the company from 2015 through 2021 to express our interest in continuing to improve their emissions profile and sustainability credentials. As much as one of the company's key strategic objectives has been "Greening the Fleet", Algonquin has been reluctant to advance its Net Zero target from 2050. Moreover, Algonquin would not commit to not add coal or gas, which is a major issue for our clients and our philosophy. We also discussed ways in which we would like the company to strengthen it sustainability credentials, including the publication of a detailed sustainability report.

Outcome: In October, 2021 Algonquin purchased Kentucky Power Corp. that generates much electricity from coal. The addition of the legacy coal generation fleet from Kentucky Power with a target to only close or divest the coal generation business by 2028 pushed the combined company outside of our emission criteria for inclusion in our portfolios and we exited the position. The deterioration of the emission profile came hand-in-hand with our assessment that such deployment of the company's resources didn't provide attractive returns relative to investments into renewables. We will continue to engage with management to encourage regarding the faster greening of their generation assets.

Proxy Voting

100% of Proxies Voted



Engagement Tracking

How we engaged	
One on One company meetings	11
Collaborative meetings	7
Letters/ Emails to company	67

Topic of engagement	
Engagements on Governance	1
Engagements on social (Labour practices)	9
Meetings on Environment	69
General ESG engagement	1

CDP provides a platform for investors to engage with companies at scale. Through CDP, investors drive corporate environmental reporting and use this information to identify and engage companies on their environmental impact. CDP's Non-Disclosure Campaign works alongside the main disclosure request, and focuses on companies that have never responded to CDP or have not responded in recent years. CDP co-ordinates participating investors to engage collectively with these companies and help drive further transparency. Ecofin supports this initiative and in 2021 led 4 engagements as a signatory on CDP disclosure and participated in 63 additional engagements as a co-signatory.

*https://www.cdp.net/en/investor/engage-with-companies

Lead Signatory on CDP Disclosure	4
Co-signatory support for CDP Disclosure	63

> Global energy storage installations will grow by more than 20x and require $262 billion of investment between 2020 and 2030.

Source: BloombergNEF "Global Energy Storage Market Set to Hit One Terawatt-Hour by 2030", November 15, 2021

Section Seven

Top ten holdings profile

We believe that companies with a thorough understanding of ESG issues are more capable of mitigating risks and enhancing their performance over the long term. Knowledge of ESG factors and risks and active ownership are integral to Ecofin's investment philosophy and process.

The following section examines the 10 largest holdings of the strategy and reports on a wider assessment of the environmental, social and governance factors we evaluate within our investment framework.

All MSCI data as of 22/3/2022. Top ten holdings as of 31/12/2021.

The top ten holdings provided should not be considered a recommendation to purchase or sell any particular security. The top ten holdings may vary and are subject to change without notice. It should not be assumed that any holdings discussed were or will be profitable.

Top ten holdings profile

Acciona Energia

Master Theme:

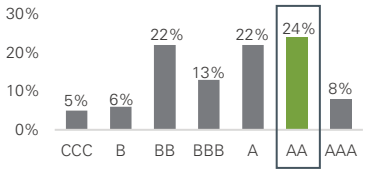
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | A | **AA** | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

Acciona Energia is a Spanish renewables developer. With over 30 years of track record, Acciona Energia was among the first companies globally to invest in utility-scale wind power. Over the years, the company has grown its portfolio from a few installations concentrated in its home market, Spain, to a global portfolios with a footprint spanning four continents and large enough to rank among the largest in the world. In 2021, Acciona Energia separated as an independent company from its parent Acciona, and was listed on the Spanish stock exchange.

Ecofin sustainability thesis

Owing to a portfolio exclusively focused on renewable technologies, Acciona Energia is one of the few major renewable developers in Europe with a fully emission-free portfolio of assets. Through its recent listing and the restructuring of its balance sheet ahead of the IPO, the company is well-positioned to significantly ramp up the run rate of capacity additions over the coming years and leverage its long-standing technical expertise to increase the size of its portfolio while helping its key end markets – Spain, the US, Australia, Chile, Brazil and Mexico – decarbonise.

SDG commitment

UN Global Compact Participant

Acciona works to accelerate the achievement of the Sustainable Development Goals. They continue to establish programs, initiatives and collaborative projects to increase their contribution to the UN SDGs. By location, Acciona tracks the impacts that their activities have on the SDGs.

Principles and Global Goals Addressed in their most recent Communication on Progress

Acciona Energia

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.000
National Grid emission intensity* (tCO2e /MWh)	0.353
Avoided emissions (tCO2e)	8,497,016
Emissions by power generation sources	
Wind	78%
Solar	10%
Hydro	10%
BioMass	2%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

One of Acciona's strengths is its low-carbon business strategy – it has been one of the first utilities in the world to achieve carbon neutrality in 2016. They are particularly focused on the requirements of the European Taxonomy and their goals of mitigation and adaptation to climate change. In fact, the company is among the first to report its alignment with the EU Taxonomy, which sees 99% of its EBITDA and 100% of its CAPEX as aligned.

They remain a leader in sustainable infrastructure solutions and renewable energy projects worldwide. Acciona has committed to biodiversity conservation as well as responsible use of natural heritage for ethical and sustainability reasons.

Water treatment in areas with accumulated water stress of
1,488 hm^3

10% reduction
in hazardous non-recovered waste generated vs 2015

75%
reduction in waste sent to landfill since 2015

In 2020
Achieved their emission targets by reducing Scope 1 and 2 by
38%
compared to 2017 and Scope 3 by
33%
for suppliers

50%
Waste generation recovered

70 million
tonnes of CO_2 avoided since 2016

Acciona Energia

ENVIRONMENT

Company ESG targets

- **Science Based Target initiative (SBTi) approved** – Near term: 1.5°C by 2030
- Signatory of **The Climate Pledge.** They have continued to maintain carbon neutrality since 2016
- Commits to **reduce absolute scope 1 and 2 GHG emissions 60% by 2030** from a 2017 base year.
- Commits to **reduce absolute scope 3 GHG emissions 47% by 2030** from a 2017 base year, covering emissions from purchased goods and services, capital goods, energy-related activities, upstream transportation and distribution, employee commuting and use of sold products.

Source: Acciona Energia

Top ten holdings profile

China Longyuan Power Group

龙源电力
LONGYUAN POWER

Master Theme:

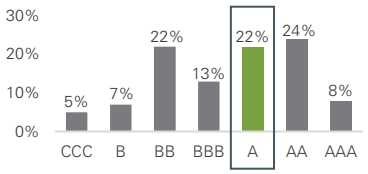
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | **A** | AA | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

China Longyuan designs, develops, manages, and operates wind farms. It is the largest wind power developer and operator in China and Asia and one of the largest ones in the world. The Company also operates other power projects including solar power, tidal power, biomass power, and geothermal power services. In addition, it manufactures and sells power equipment, and it provides consulting, maintenance, and training services to wind and other renewable power generation plants.

Ecofin sustainability thesis

As a leader in China's new energy sector, Longyuan emphasizes the importance of corporate social responsibility and regards it as a crucial component to fulfil its mission to develop clean energy for China. Longyuan actively promotes and advocates low carbon practices across the industry and contributes significantly to the emission reductions in China and therefore the Paris agreement net zero goals. It maintains its leadership in the global wind power generation sector. It added 1,113 MW of wind power capacity in 2019 with its total installed capacity to exceed 20,000 MW, with its offshore installed capacity ranking third in the world. Its cumulative power generation was 50.736 billion kWh, of which wind power generation is 40.732 billion kWh, an increase of 3% yoy.

Furthermore, it has been enhancing its corporate social responsibility policies and practices, which are considered by the company as crucial elements to drive clean energy development in China.

China Longyuan is driving the energy transition process by providing affordable and clean energy solutions and accelerating adoption of renewables.

SDG commitment

With its strong commitment to accelerate adaptation of renewables and its sustainability driven practices, we believe Longyuan is aligned with the following SDGs:

China Longyuan Power Group

龙源电力
LONGYUAN POWER

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.181
National Grid emission intensity* (tCO2e /MWh)	0.655
Avoided emissions (tCO2e)	24,062,394
Emissions by power generation sources	
Coal	19%
Wind	80%
Solar	1%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

China Longyuan is a leader in China's new energy sector and the largest wind producer in China and the world with over 19GW of wind assets. Renewables cost of production in China are falling below fossil fuel costs, making the need for subsidies obsolete and therefore reducing the risk of accumulating receivables on the balance sheet. China Longyuan has had mid-teens growth even before China committed to net zero and renewables were more expensive than fossil fuel electricity assets. Growth of renewables in China is expected to accelerate with China Longyuan as a key beneficiary.

Effective management of sulfur dioxide emission with solid green management practices

Increased investments in environmental protection and completed 116 environmental protection projects

Overseas Corporate Responsibility Model Enterprise Award at the 2019 China Corporate Social Responsibility Report Summit

Won the outstanding award of the China Energy Group's 2019 Award Fund with its efficient energy management and innovation

Comprehensive and efficient implementation of CSR policy 2019 with focus on key social responsibilities.

China Longyuan Power Group

龙源电力
LONGYUAN POWER

ENVIRONMENT

Company ESG targets

- Utilise **renewable energy generation** to replace fossil fuel energy
- Work to promote the **sustainable development of the Company and the industry**
- Significant contribution to China's recent commitment to **peak its carbon dioxide emissions** before 2030 and **achieve carbon neutrality** before 2060
- Maintain policies that led China Longyuan to win **Overseas Corporate Responsibility Model Enterprise Award**

Source: China Longyuan Power Group

Top ten holdings profile

Drax

Master Theme

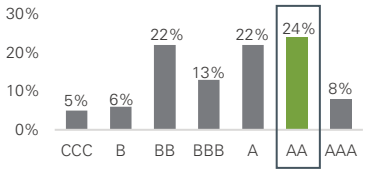
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | A | **AA** | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

Formerly the operator of Europe's largest coal power plant, Drax is now Europe's largest generator of electricity from biomass. In recent years, the company has been significantly expanding its biomass supply business, with a focus on self-sufficiency, to become the world's second-largest player in biomass pellets. During 2021, the company sold down its remaining gas power plants and ceased commercial operations at the remaining coal-fired units of Drax Power Plant.

Ecofin sustainability thesis

Drax is arguably Europe's fastest evolving utility. With the sale of its gas plants in 2021 and the end of coal firing in 2022, Drax will have eliminated all direct carbon emissions from its portfolio. The company is leveraging its position as Europe's largest biomass power generator to consolidate and expand the global pelleting market, bringing the benefits of increased availability and cost reduction to UK energy consumers as well as global biomass power plant operators. Additionally, the company is taking a step further by progressing its plans to become the world's first carbon negative utility through the pioneering installation of carbon capture at its biomass units. This project, which is expected to make substantial progress in 2022, is set to make a significant contribution to the UK's net zero emissions targets as well as materially improve the company's financial outlook beyond the next decade.

SDG commitment

UN Global Compact Participant

Drax has identified non-financial goals that benefit its stakeholders and align with the UN Sustainable Development Goals (SDGs). As a participant of the UN Global Compact, Drax prioritises SDGs and ensures the alignment with them as its business evolves.

Principles and Global Goals Addressed in their most recent Communication on Progress

Drax

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.144
National Grid emission intensity* (tCO2e /MWh)	0.288
Avoided emissions (tCO2e)	2,713,479
Emissions by power generation sources	
Coal	8%
Natural Gas	15%
Hydro	2%
BioMass	75%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

To maintain a sustainable business, Drax has three priorities; carbon negative, forest positive, and people positive. Each priority has its own non-financial ambition to improve Drax as a company and the world as a whole. Drax aligns the purpose of its products and technology to tackling climate change. The company's ambition to reach net zero by 2030 will help push the UK and the rest of the world toward their climate change targets. Through its transition away from fossil fuels and into biomass, Drax has already reduced its carbon footprint by >85% compared to 2012.

Between 2012 and 2020, Drax's generation carbon intensity fell by more than

80%

Announced in February 2020 an

end to commercial coal generation

effective in March 2021

In 2020

99%

of the woody biomass sourced was SBP (Sustainable Biomass Program) compliant

In 2020

77%

of the power generated by Drax was renewable

In 2020, Drax invested in significant upgrades to its

turbines and associated equipment

Drax

Company's ESG targets

ENVIRONMENT

- **Science Based Target initiative (SBTi)** committed (due to set a science-based target aligned with the SBTi's target setting criteria within 24 months from the announcement), member of the Business Ambition for 1.5 campaign.
- Drax's ambition is to become **carbon negative** by 2030
- **Fossil fuel phase-out** by 2023
- **World first biomass carbon capture project** expected by 2027
- **World first negative emission utility** with 8mt of negative CO_2 emissions by 2030, satisfying >15% of the UK's negative emissions needs to achieve net zero by 2050

SOCIAL

- Drax's ambition is to **improve skills, education, employability and opportunity** for 1 million people by 2025

Source: Drax

Top ten holdings profile

Edison International

EDISON INTERNATIONAL®

Master Theme:

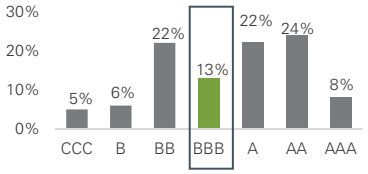
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | **BBB** | A | AA | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

Edison International develops, acquires, owns and operates electric power generation facilities in California. It is one of the nation's largest electric utility holding companies, providing clean and reliable energy and energy services through its independent companies. Edison International is the parent company of Southern California Edison (SCE) Company, an utility that delivers electricity to 15 million people across Southern, Central and Coastal California. In addition to its regulated business, Edison also has an energy solutions business that works directly with commercial, institutional and industrial customers to provide sustainability and energy optimisation services.

Ecofin sustainability thesis

Edison serves over 15 million residents in California, which is aggressively pursuing climate change initiatives and has some of the most aggressive climate goals in the United States. The company is expected to grow its rate base by 7-9% per year by investing in transmission and distribution projects that modernize the power grid and replace aging infrastructure. Beyond infrastructure replacement, Edison's regulated growth is driven by modernising California's power grid to integrate the accelerating presence of renewables, battery storage and distributed energy. Over 40% of the power delivered by Edison's regulated utility is carbon-free, and the company plans to reach 100% by 2045. The Edison Energy business also provides unique sustainability insights for the utility business, as it can utilise customer behavior to assess the requirements needed from the grid.

SDG commitment

With its core business and clean energy strategy, Edison International aims to focus on several key SDGs and their underlying targets. These SDGs align with Edison International's vision to lead the transformation of the electric power industry toward a clean energy future and to provide safe, reliable, affordable, and clean power.

Edison International

EDISON INTERNATIONAL®

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.093
National Grid emission intensity* (tCO2e /MWh)	0.413
Avoided emissions (tCO2e)	4,010,943
Emissions by power generation sources	
Natural Gas	25%
Solar	1%
Hydro	34%
Nuclear	40%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

Sustainability is at the core of Edison International's vision to lead the electric power industry towards a clean energy future. This vision is underpinned by their "Pathway 2045" plan, a data-driven analysis of the steps needed to meet the 2045 goals to clean the electric grid and reach carbon neutrality. With more than 2,000 MW of energy storage installed or contracted, SCE has one of the largest energy-storage portfolios in the nation.

In 2020
1,490
gigawatt hours (GWh)
of energy saved through more than 90 energy efficiency programs

43%
of SCE's total delivered power generated from carbon-free sources

960 miles
of overhead power lines replaced with insulated wire and more than
6,090 poles
with fire-resistant poles

Reduction of
555,000 metric tons
of GHG emissions

Installation of more than
15,000
clean, efficient electric space and water heat pumps, replacing natural gas furnaces

Smart Electric Power Alliance Top 10 Utility Transformation Leaderboard
for accelerating transformation to a carbon-free, modern grid

Edison International

Company ESG targets

ENVIRONMENT

- By 2030, **60% of power** from renewable sources
- To deliver **100% carbon-free power** in terms of retail sales to customers by 2045
- By 2024, obtain SCE customer commitments **to deploy 8,490 medium and heavy-duty electric vehicles** at **870 sites** through SCE's Charge Ready Transport program
- By 2025, obtain SCE customer commitments **to deploy** (or commit to deploy for utility owned installations) **at least 41,000 electric vehicle charge ports to serve at least 2,200 sites** through SCE's Charge Ready light-duty vehicle charging programs
- By 2030, within SCE's transportation fleet, **electrify 100% of light-duty vehicles, 30% of medium-duty vehicles, 8% of heavy-duty vehicles and 60% of forklifts**

SOCIAL

- **No serious injuries** to the public from failure of SCE's electrical system
- By 2026, **improve employee physical and psychological safety** as measured by safety culture assessment

GOVERNANCE

- **Achieve gender parity** in executive roles by 2030

Source: Edison International

Top ten holdings profile

EDP

Master Theme:

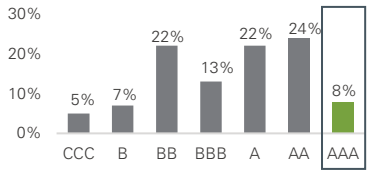
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | A | AA | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

EDP is Portugal's largest utility and one of the largest wind power developers in the world. It operates in 16 countries and produces nearly 70% of its output renewable resources. EDP was an early mover into renewable energies and since 2006 has invested over €20 billion in renewables, of which 75% has been in onshore wind and 40% in the U.S., through its listed renewables subsidiary EDPR. As a fully integrated utility, EDP is also heavily involved in the distribution and transmission of electricity, both in Europe (across Portugal and Spain) and in Brazil, where it owns Energias do Brasil. Through a partnership with Engie, EDP is also present as a key player in the offshore wind arena.

Ecofin sustainability thesis

EDP is a leader in renewable energy deployment and climate change mitigating efforts from utilities companies, therefore it contributes significantly to the global decarbonisation process. The company has been focusing on low carbon intensity operations as growth opportunities. Furthermore, its carbon neutrality targets are among the most ambitious ones set by integrated utility companies.

SDG commitment

UN Global Compact Participant

With its strong ambitions to reduce emissions and promoting renewable energies, several environmental SDGs are embedded in business growth strategy. Through different programmes and policies, EDP is committed to contribute to a significant number of other SDGs.

Principles and Global Goals Addressed in their most recent Communication on Progress

HUMAN RIGHTS | LABOUR | ENVIRONMENT | ANTI-CORRUPTION

EDP

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.231
National Grid emission intensity* (tCO2e /MWh)	0.293
Avoided emissions (tCO2e)	4,120,535
Emissions by power generation sources	
Coal	18%
Natural Gas	16%
Wind	45%
Hydro	21%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

EDP intends to grow through a business model adapted to the challenges of sustainable development. Their sustainability strategy is based on two pillars: to lead the Energy Transition and to commit to the Environment and Society. EDP has already achieved some significant decarbonisation milestones. They are also engaged in different initiatives to enhance their societal commitments.

Carbon neutrality by
2030

Avoided CO_2 emissions in customers:
1.4 $MtCo_2$

Energy efficiency
3.6 TWh
saved energy by customers since 2015

Total 1, 2 and 3 scope emissions
scope 1: -35% **vs 2019**
scope 2: -30% **vs 2019**
scope 3: -1.3% **vs 2019**

Renewables installed capacity
79% **in 2020 vs**
74% **in 2019, exceeding the target set for 2022**

Electricity production from renewable sources
74% **in 2020 vs**
67% **in 2019**

EDP

Company ESG targets

ENVIRONMENT

- **Science Based Target initiative (SBTi) approved** – 1.5°C: **reduction of 98%** of Scope 1 and 2 emissions and **reduction of 50%** of Scope 3 emissions by 2030 vs 2015
- 78% renewable installed capacity by 2022. **100% renewable generation** by 2030
- >1,000 MW of solar installed capacity (centralised and distributed) by 2022
- Internalise the TCFD **recommendations 100%** by 2022
- By 2022, **100% carbon neutral** EDP office buildings
- **Coal-free** by 2025
- **>80% of revenues** to align with EU taxonomy by 2030

SOCIAL

- **Female workforce** overall to reach **30%** in 2025 and **35%** in 2030
- **SDGs social investment** to reach **50 million** Euro in 2025 and **100** in 2030

GOVERNANCE

- **Female leadership** to reach **30%** in 2025 and **35%** in 2030
- Maintain top management compensation to ESG matrices

Source: EDP

Top ten holdings profile

ERG S.p.A.

Master Theme:

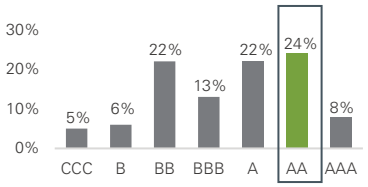
ELECTRIFICATION

MSCI ESG Ratings

CCC	B	BB	BBB	A	AA	AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

ERG is an Italian renewables developer. The company was founded in 1938 as the largest independent oil refiner in Italy. Following its listing in the late 90s, the company began to expand in renewable across Italy, Germany and France while progressively divesting its oil and gas assets in the late 2000s. In 2013, ERG became the leading wind farm operator in Italy, and expanded into hydroelectric power through the acquisition of a portfolio of assets from E.ON. In 2018, ERG completed its exit from the oil and gas value chain with the sale of its remaining stake in the petrol station business TotalErg. More recently, the company has refocused its efforts to become a pure wind and solar developer by agreeing the sale of its hydroelectric and gas (CCGT) assets to Enel.

Ecofin sustainability thesis

Over the past two decades, ERG has undergone a major transformation from an oil and gas company focused on refining to a major player in European renewables. With the sale of its last remaining gas plant in 2022, the company will now be fully focused on renewables development at a time where governments across Europe are putting huge policy efforts behind accelerating renewable capacity growth by de-bottlenecking remuneration and permitting processes. This presents a major opportunity for ERG to exploit its position as a leading owner of renewable assets in Italy and central Europe and substantially increase the pace of its portfolio growth.

SDG commitment

ERG recognizes the UN Sustainable Development Goals and believes their business model helps to do so. They play a central role in the transition of the energy system which is very important for sustainable development. Each year ERG reports the implementation status of their commitments in line with the SDGs. Their objectives are clearly defined and constantly monitored and measured through KPIs.

ERG S.p.A.

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.116
National Grid emission intensity* (tCO2e /MWh)	0.288
Avoided emissions (tCO2e)	1,365,426
Emissions by power generation sources	
Natural Gas	32%
Wind	50%
Solar	3%
Hydro	15%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

In 2021, ERG created an ESG plan which consists of four pillars. They are planet, engagement, people and governance. These pillars provide measurable objectives that align with the ERG business plan to further integrate sustainability. They have created systems, principles and policies to maintain ethical dialogue, sustainable activities and strong governance. They have created a business plan which includes a focus on having a fully integrated ESG business strategy.

In 2020 more than
9 million
tons of avoided CO_2

90%
of indirect consumption supplied by "green" energy

89%
capital invested in renewable energy plants in 2020

90%
of energy requirements covered with energy produced from renewable sources.

ERG S.p.A.

Company ESG targets

ENVIRONMENT

- **Science Based Target initiative (SBTi) approved** – Near term: Well below 2°C by 2025
- ERG commits to **reduce scope 1 and 2 GHG emissions 45.4% per MWh** by 2025 from a 2020 base year
- ERG commits to increase annual sourcing of renewable electricity from **94% in 2020 to 96% by 2025**
- Reduce carbon index of electricity production by **14% by 2022**

SOCIAL

- Contribute to the **development of communities through training activities** at schools and universities and social responsibility initiatives at local level
- Commits to **>1%** of sales to the local communities and their next generation education

GOVERNANCE

- Consolidate the safety culture inside and outside the company, pursuing the **goal for zero accidents caused by safety deficits** in plants and offices by 2022.
- Implement the Environment - Safety certification for all Italian and foreign operating companies, in line with the **"ONE Company"** organisational structure.

Source: ERG S.p.A.

Top ten holdings profile

Exelon

Master Theme:

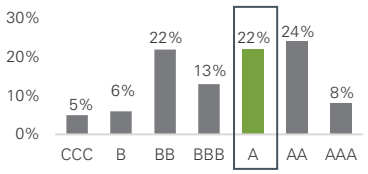
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | **A** | AA | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

Exelon is a utility services company involved in every part of the energy value chain: power generation, from nuclear, natural gas to wind and solar, energy sales, as well as rate-regulated transmission and distribution network. Its six utilities serve 10 million electric and gas customers in 48 states. Its strongly committed to provide green and innovative energy products. As the owner of nearly 19,000 MW of zero-carbon generation capacity at 23 nuclear units, Exelon has the cleanest generation fleet of the largest investor-owned power producers in the U.S. Currently it produces 11.1% of U.S. zero carbon electricity supply. Its subsidiaries are involved in grid modernisation projects and the electrification of transportation to help the U.S. to reach the Paris Agreement goals.

Ecofin sustainability thesis

As the pre-eminent leader in the nuclear power generation, Exelon contributes significantly to the pathway towards decarbonisation. Beyond the nuclear portfolio, the company's utility business is investing in its transmission and distribution infrastructure to enable additional growth in renewable power generation. Furthermore, Exelon is investing in research and development partnership that fund clean energy technology development including hydrogen, biofuels, battery storage, and carbon capture.

Exelon drives the energy transition being the largest producer of zero carbon electricity in the U.S. and having the lowest carbon intensity among major power producers.

SDG commitment

Exelon's business is focused on address three SDGs as priority: SDG 7, 9 and 13. As an energy company, the main contribution comes from new technologies and systems to enable clean and efficient energy use. By modernising electric and gas infrastructure, Exelon aims to ensure universal access to affordable and reliable energy services.

Furthermore, Exelon's operations and internal policies are also aligned with other secondary SDGs. For example, Exelon is strictly connected to the local communities through engagement and partnerships and it provides grow and workforce development opportunities. The stakeholder engagement strategy has been key in building dialogues with different groups of stakeholders.

Exelon

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.044
National Grid emission intensity* (tCO2e /MWh)	0.413
Avoided emissions (tCO2e)	69,816,442
Emissions by power generation sources	
Natural Gas	11%
Wind	1%
Hydro	1%
Nuclear	86%
Oil & Derivatives	1%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

Exelon strives to conduct business in a way that is sustainable for employees, customers, and the communities in which they work and live. Exelon achieved their carbon reduction goals years ahead of schedule and are now working to electrify 30 percent of its utility vehicle fleet by 2025 and 50% by 2030. The strong sustainability focus has led Exelon to be largest producer of carbon-free energy in the U.S.

The company has also joined other global calls to address inequality by creating different initiatives including Racial Equity Task Force (RETF) with executive leadership.

Deployed
$6.6 billion
in capital to enhance resilience, reliability and infrastructure modernisation, with plans to invest further
$27 billion
in the next 3 years

Achieved 95.4% capacity factor at nuclear fleet, avoiding approximately
78 million
metric tons of GHG emissions

In 2020, owned-generation intensity rate was
89%
lower than the national average emission rate

Helped utility customers save
22.3 million MWh
and avoid
8.1 million metric tons
of CO_2e through energy efficiency programs

In 2020, returned
98% **of water used by its facilities directly to its source**

Clear GHG emissions reduction trends:

Total Exelon GHG Emissions

	2018	2019	2020
Scope 1	9,526	9,395	8,493
Scope 2 (location-based: As delivered)	6,120	6,103	5,228
Total Scope 1 & 2	**15,646**	**15,498**	**13,720**
Relevant Scope 3	197,376	180,732	178,659

Exelon

Company ESG targets

- Exelon's utilities will electrify **30 percent** of their vehicle fleet by 2025, increasing to **50 percent** by 2030
- Exelon's utilities announced on April 14, 2021 that they will **reduce their collective GHG emissions** by at least **50 percent below** 2015 levels by 2030
- Reduce emissions in direct control by **15%** by 2022 vs 2015

Source: Exelon

Top ten holdings profile

NextEra Energy

Master Theme:

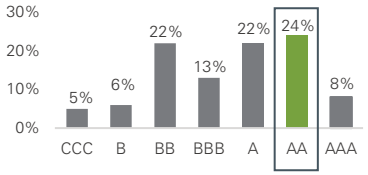
ELECTRIFICATION

MSCI ESG Ratings

CCC	B	BB	BBB	A	AA	AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

NextEra Energy provides sustainable energy generation and distribution services. The Company generates electricity through wind, solar, and natural gas. Its principal subsidiaries are Florida Power & Light, a rate-regulated electric utility serving approximately 5 million customers in Florida, and NextEra Energy Resources which, with its affiliated entities, is the largest generator of energy from wind and sun in the world. NextEra also develops and builds battery storage projects and is involved in pipeline infrastructure management.

Ecofin sustainability thesis

NextEra management continuously emphasizes the company's vision of being the largest and cleanest energy provider in the world and its position to lead the decarbonisation of the U.S. economy. The company's ownership of both a regulated utility in a forward-thinking state and its competitive renewable development platform uniquely positions it to solve customer needs and reliability concerns while advancing technologies that can ultimately be used at scale to reduce emissions around the world. NextEra's development of decarbonised electric grid will also benefit the industrial and transportation sectors. Management's recent discussions around green hydrogen opportunities in industrial processes illustrate how the company can continue to expand its sustainability efforts beyond renewable power generation.

SDG commitment

With its strong ambitions to reduce emissions and promoting renewable energies, several environmental SDGs are embedded in business growth strategy. NextEra is directly aligned with 3 SDGs as priority but all other SDGs are indirectly aligned with various aspects of the corporate strategies.

NextEra Energy

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.210
National Grid emission intensity* (tCO2e /MWh)	0.413
Avoided emissions (tCO2e)	42,058,289
Emissions by power generation sources	
Coal	3%
Wind	21%
Solar	3%
Natural Gas	48%
Nuclear	25%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

NextEra's approach to sustainability engages all levels of the company from the board of directors to employees and it is underscored by a commitment to sustainable business practices. The company believes that a combination of low-cost renewables and energy storage technologies will lead to the net zero path of energy sector. These practices have allowed NextEra to have produced a nearly 98% of power through clean or renewable sources in 2020. Climate related risks and opportunities are deeply embedded in the capital expenditures, acquisitions and revenues and have also influenced the renewable energy deployment and grid hardening initiatives.

At FPL, the operational strategy has incorporated all the environmental factors by modernising the generation fleet and reducing the use of oil by approximately 99% since 2001. The company is also phasing out coal rapidly in the upcoming years. With the new installation plan of solar panels, more focus will be on deploying solar in the next stage.

NextEra Energy Resources, on the other hand, is specialised in low-cost wind and solar generation assets, increasingly paired with battery storage.

The company has conducted an extensive scenario analysis to model the U.S. energy grid with the purpose to determine concrete actions to achieve net zero goals by 2050.

In 2020, NextEra's sulfur dioxide, nitrogen oxides and CO_2 emission rates were
97%, 79% and 47%
lower, respectively, than the U.S. electric power sector average

56.6%
of reduction in CO_2 emissions rate in 2020 from 2005

24.2%
reduction in absolute CO_2 tons emitted in 2020 from 2005

In 2020 Nextera added
4,672 MW
of wind and solar generation which represented
over 13%
of all solar and wind capacity added in the US for the year.

FPL's generation fleet has saved customers
$11.3 billion
in fuel costs and avoiding more than
165 million tons
of CO_2 emissions since 2001

74.6%
increase in clean electricity generation in 2020 from 2005

$14.7 billion
invested in America energy infrastructure in 2020

98%
of the power was generated by renewables in 2020

NextEra Energy

ENVIRONMENT

Company ESG targets

- NextEra's goal is to reduce their CO_2 emissions rate **67%** by 2025 from an adjusted 2005 baseline, equivalent to a nearly **40% reduction** in absolute CO_2 emissions despite nearly doubling expected electricity generation in the same period
- From 2019-2022, NextEra Energy Resources expects to bring online an additional **3,800 to 7,300 megawatts** of clean, **emissions-free solar energy**
- Commitment to **converting 60%** of their light-duty vehicle fleet to electric or plug-in hybrid by 2030
- FPL **increase in battery storage** deployment with approximately **700 MW** of additional battery storage, for a total of **1,200 MW of battery storage** by 2030
- '30-by-30' plan to **install 30 million solar panels** in Florida by 2030, representing one of the largest solar expansions in the world

Source: NextEra Energy

Top ten holdings profile

Terna S.p.A.

Company overview

Terna is a natural monopoly which owns and operates Italy's high voltage electricity transmission grid. Spun out of Enel in 1999, and listed in 2004, Terna remains 25% owned by the Italian State but has increasingly attracted interest from international infrastructure investors thanks to its execution track record and superior growth rates.

Ecofin sustainability thesis

Over the past five years, Terna has consistently delivered double-digit annual upgrades to its medium-term investment plan on the back of growing demand from Italy's electricity system for both cross-border and internal electricity network interconnection to accommodate a rising share of wind and solar in the power generation mix. As Italy upgrades its renewables targets to reflect the EU's ambition to reach net zero by 2050 and unlocks permitting bottlenecks which have held back renewable capacity installations for years, Terna's growth prospects are set to increase further. Considering Italy's challenging geography, combining a largely mountainous territory with elevated seismicity with numerous islands and numerous large population centers, Terna's network expansion plans are a key enabler of the country's decarbonisation.

SDG commitment

UN Global Compact Participant

Terna has highlighted key SDGs with strategic objectives that represents their sustainability strategy. The SDGs guide Terna to achieving environmental, social and ethical governance objectives. They will continue to prioritize the UN SDGs to help reach sustainable development.

Principles and Global Goals Addressed in their most recent Communication on Progress

Master Theme:

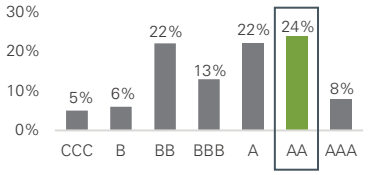
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | A | **AA** | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Terna S.p.A.

Ecofin Proprietary Database Analysis

Emissions by power generation sources

Transmission	100%

Information calculated for calendar year 2021.

Sustainability profile

As a pure operator of electricity infrastructure, Terna has very limited emissions across scopes 1 to 3. Through its investments in fortifying and expanding the Italian electricity grid, Terna will play a pivotal role in the country's decarbonisation, actively contributing to most of the emissions avoided in the process.

The company has sets 14 sustainability objectives around environmental and social issues between 2021-2025. They believe in a sustainability model that includes additional voluntary disclosure on non-financial reporting requirements. Terna is committed to help achieve climate change reduction targets and will do so by "building a grid capable of enabling the ecological transition towards a carbon-free system based on renewable energy."

38%
of energy consumption generated by renewables

Average system availability
99.99%

95%
of waste recovered in 2020
Achieved and continues a safety culture with zero accidents

Achieved their 2020 target of
100%
use of ESG criteria in "vegetation management"

A SF_6 leakage rate of
0.32%
(as a % of the total installed)

In 2021, for the third year running, Terna has been named
global number one in the Electric Utilities sector of the Dow Jones Sustainability World Index

Terna S.p.A.

ENVIRONMENT

Company ESG targets

- **Science Based Target initiative (SBTi) approved** – Near term: Well below 2°C by 2030
- Terna S.p.A.commits to **reduce absolute scope 1 and 2 GHG emissions 28%** by 2030 from a 2019 base year.
- A goal of having **>95%** of regulated investments classified as **"green"** under the current criteria aligned with the EU Taxonomy Regulation by 2023
- **Phase-out of coal** by 2025
- **-33%** greenhouse gas emissions compared with 2005 levels
- **-43%** primary energy consumption compared with the trend scenario

SOCIAL

- Terna expects to see a **10% increase** in its workforce in the first three years to **over 5,000** by 2025
- Terna will earmark approximately **€900 million** of the total €8.9 billion for digitalisation and innovation by 2025.

Source: Terna S.p.A.

Top ten holdings profile

Transalta Renewables

TransAlta renewables

Master Theme:

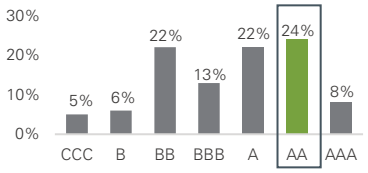
ELECTRIFICATION

MSCI ESG Ratings

CCC | B | BB | BBB | A | **AA** | AAA

ESG Rating Distribution

MSCI ACWI Index constituents, utilities



Company overview

TransAlta Renewables owns or maintains an economic interest in 44 generation assets in Canada, the United States, and Australia, resulting in owned generation capacity of 2,537 MW. Wind generation makes up 23 of the assets with a total capacity of 1,446 MW and primarily located in Canada, with the balance in the US. The company also owns hydro, solar and battery assets making up nearly 150 MW. The remaining MW come from 7 natural gas facilities that are fully contracted and located in Canada and Australia. The hydro assets operate as critical back up for wind and solar assets and exhibit attractive contract terms with optionality around extensions terms. The company is majority-owned by its parent company, TransAlta, a power generation developer.

Ecofin sustainability thesis

As one of the largest generators of wind power in Canada, TransAlta Renewables owns a diversified portfolio of assets highlighted by a combination of non-emitting and reliable assets. The hydro assets provide a valuable market stability service and enable continued build out of renewable assets within their operating regions. The company's growth profile is centered on renewable development, including a recent announcement to build its first solar asset in Australia for a committed industrial off taker, and its acquisition of solar assets in North Carolina. TransAlta Renewables' parent company also has explicit sustainability targets concerning mine reclamation, water management, waste reduction, and emission reduction. These sustainability objectives extend to TransAlta Renewables as its parent company views the company as a strategic piece of the TransAlta family as it executes on its sustainability goals.

SDG commitment

Transalta has robust desires to reduce emissions and promote key sustainable initiatives centered on UN SDGs embedded in business growth strategy. They have set long term sustainability targets to ensure the success of their business and position themselves to be an ESG leader. They have established goals and targets with reference to the UN SDGs to ensure their business goals and targets are meaningful in the broader context of solving social challenges and achieving a more sustainable planet for the future.

Transalta Renewables

TransAlta renewables

Ecofin Proprietary Database Analysis

Power generation GHG emissions	
Company's emission intensity (tCO2e /MWh)	0.167
National Grid emission intensity* (tCO2e /MWh)	0.289
Avoided emissions (tCO2e)	831,388
Emissions by power generation sources	
Natural Gas	45%
Wind	49%
Hydro	6%
Total Generation MWh	**100%**

*National Grid Emission Intensity is weighted by country exposure.
Information calculated for calendar year 2021.

Sustainability profile

Sustainability is one of Transalta's core values. They have integrated it through the corporate culture and made it one of their top priorities. Their focus on sustainability is centred on continuous improvement of key ESG issues and supporting climate change management programs. Overall, their sustainability goals are outlined in their E2SG program, targeting economic, environment, social, and governmental goals.

The company receives management services from its parent company and therefore exhibits a strong commitment to TransAlta's sustainability practices, which includes assessment of supplier practices. The company was created for the purpose of pursuing strategic growth opportunities in clean electricity. It views its investment in natural gas generation as a fit for its strategic direction as the facilities provide low-emission generation to support grid stability and enable the growth of intermittent renewable generation.

Reduction of
25 million tonnes of CO2e
equivalent of 61%, since 2005

Grew renewable energy capacity from approximately
900MW **in 2000 to over**
92,500MW **in 2020**

SO2 emissions reduction of
83% **over 2005 levels,**
NO2 emissions reduction of
68% **over 2005 levels,**

Equity, Diversity and Inclusion
Council established

Saved over 2.9 million tonnes of CO2e
through renewable energy production, equivalent to removing approximately 630,000 **cars from the road in 2020**

Transalta Renewables

TransAlta renewables

Company ESG targets

ENVIRONMENT

- **Science Based Target initiative (SBTi) approved** – Near term: "Committed"
- By 2030, achieve a **95%** reduction of SO2 emissions
- By 2030, achieve company-wide **GHG reductions of 60%** below 2015 levels, in line with a commitment to the UN SDGs and prevention of 2°C of global warming
- **No further coal generation** by the end of 2025 and **100%** of their owned net generation capacity will be from clean electricity (renewables and gas)
- By 2040, **complete full reclamation** of their Centralia coal mine in Washington State
- By 2022, reduce total waste generation by **80%** over a 2019 baseline

SOCIAL

- Achieve a Total Recordable Injury Frequency rate **below 0.61**

GOVERNANCE

- Achieve a quota of **50%** female representation on the Board by 2030
- Achieve at least **40%** female employment among all employees of the Corporation by 2030

Source: Transalta Renewables

Important disclosures

Ecofin Advisors Limited ("Ecofin UK") is authorised and regulated by the Financial Conduct Authority and is also registered with the U.S. Securities and Exchange Commission as an investment advisor.

The UN Sustainable Development Goals are a collection of 17 goals developed by the United Nations that are designed to be a framework in which countries aim to tackle a range of issues, from combating climate change to ending poverty and hunger.

The United Nations-supported Principles for Responsible Investment (PRI) initiative is recognised as the leading global network for investors and financial industry participants who are committed to integrating environmental, social and governance (ESG) considerations into their investment practices and ownership policies.

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Past performance is no guarantee of future results.

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The MSCI ESG Fund Ratings is designed to assess the resilience of a fund's aggregate holdings to long term ESG risks. Highly rated funds consist of issuers with leading or improving management of key ESG risks.

- AAA, AA: Leader- The companies that the fund invests in tend to show strong and/or improving management of financially relevant environmental, social and governance issues. These companies may be more resilient to disruptions arising from ESG events.
- A, BB, BB: Average- The fund invests in companies that tend to show average management of ESG issues, or in a mix of companies with both above-average and below-average ESG risk management.
- B, CCC: Laggard- The fund is exposed to companies that do not demonstrate adequate management of the ESG risks that they face or show worsening management of these issues. These companies may be more vulnerable to disruptions arising from ESG events.

The Fund ESG Rating is calculated as a direct mapping of "Fund ESG Quality Score" to letter rating categories.

- 8.6- 10: AAA
- 7.1- 8.6: AA
- 5.7- 7.1: A
- 4.3- 5.7: BBB
- 2.9- 4.3: BB
- 1.4- 2.9: B
- 0.0- 1.4: CCC

Important disclosures

The "Fund ESG Quality Score" assesses the resilience of a fund's aggregate holdings to long term ESG risks. Highly rated funds consist of issuers with leading or improving management of key ESG risks, based on a granular breakdown of each issuer's business: its core product or business segments, the locations of its assets or revenues, and other relevant measures such as outsourced production. The "Fund ESG Quality Score" is provided on a 0-10 score, with 0 and 10 being the respective lowest and highest possible fund scores.

The "Fund ESG Quality Score" is assessed using the underlying holding's "Overall ESG Scores", "Overall ESG Ratings", and "Overall ESG Rating Trends". It is calculated in a series of 3 steps.

Step 1: Calculate the "Fund Weighted Average ESG Score" of the underlying holding's "Overall ESG Scores". The Overall ESG Scores represent either the ESG Ratings Final Industry-Adjusted Score or Government Adjusted ESG Score of the issuer. Methodology for the issuer level scores are available in the MSCI ESG Ratings Methodology document.

Step 2: Calculate adjustment % based on fund exposure to "Fund ESG Laggards (%)", "Fund ESG Trend Negative (%)", and "Fund ESG Trend Positive (%)".

Step 3: Multiply the "Fund Weighted Average ESG Score" by (1 + Adjustment %).

For more information please visit https://www.msci.com/esg-fund-ratings

Ecofin is a sustainable investment firm with roots dating to the 1990s and a global footprint with offices in the U.S. and UK. Our core belief is we can deliver strong risk-adjusted returns and create a healthier planet and society. Our strategies offer global solutions in private and public securities that address global challenges in climate action, water and social impact. Through these strategies we seek to achieve positive impacts that align with UN Sustainable Development Goals and are accessible through a variety of vehicles. Ecofin Investments, LLC is the parent of registered investment advisers Ecofin Advisors, LLC and Ecofin Advisors Limited (collectively "Ecofin").

Learn more at www.ecofininvest.com

1. The Wall Street Journal-The Electrification of Everything: What You Need to Know
2. Automotive World, November 23, 2020 "Risky business: the hidden costs of EV battery raw materials
3. International Energy Agency, Transport: Improving the sustainability of passenger and freight transport
4. Environmental Defense Fund
5. Architecture 360