

# BNP PARIBAS ENERGY TRANSITION DAB CONGRESS SEPTEMBER 2022

GABRIELLE KINDER, INVESTMENT & ENVIRONMENTAL SPECIALIST



# BNP Paribas Asset Management is part of BNP Paribas Group

## BNP Paribas Asset Management

**3000+** <sup>(1)</sup>

### Staff Worldwide

3000+ in staff across 36 countries, with over 520 investment professionals

**€ 502 B.**

### AUM

Across a broad range of asset classes, on behalf of a wide range of clients globally

**Est. 1964**

### Long History

A trusted partner in asset management since our establishment in 1964

**Est. 2002**

### Dedicated ESG Team

An internal dedicated ESG analyst team has contributed to our approach since 2002

## BNP Paribas Group

**200,000~**

### Staff Worldwide

200k+ in staff across 71 countries, generating a net group income of €8.2B (2019)

**71**

### Countries Worldwide

With locations in over 71 nations around the world, BNP Paribas has a truly global presence

**Est. 1822**

### Long History

Close to two centuries of uniquely rich history and industry experience

**A+<sup>(2)</sup>, Aa3,<sup>(3)</sup> AA-<sup>(4)</sup>**

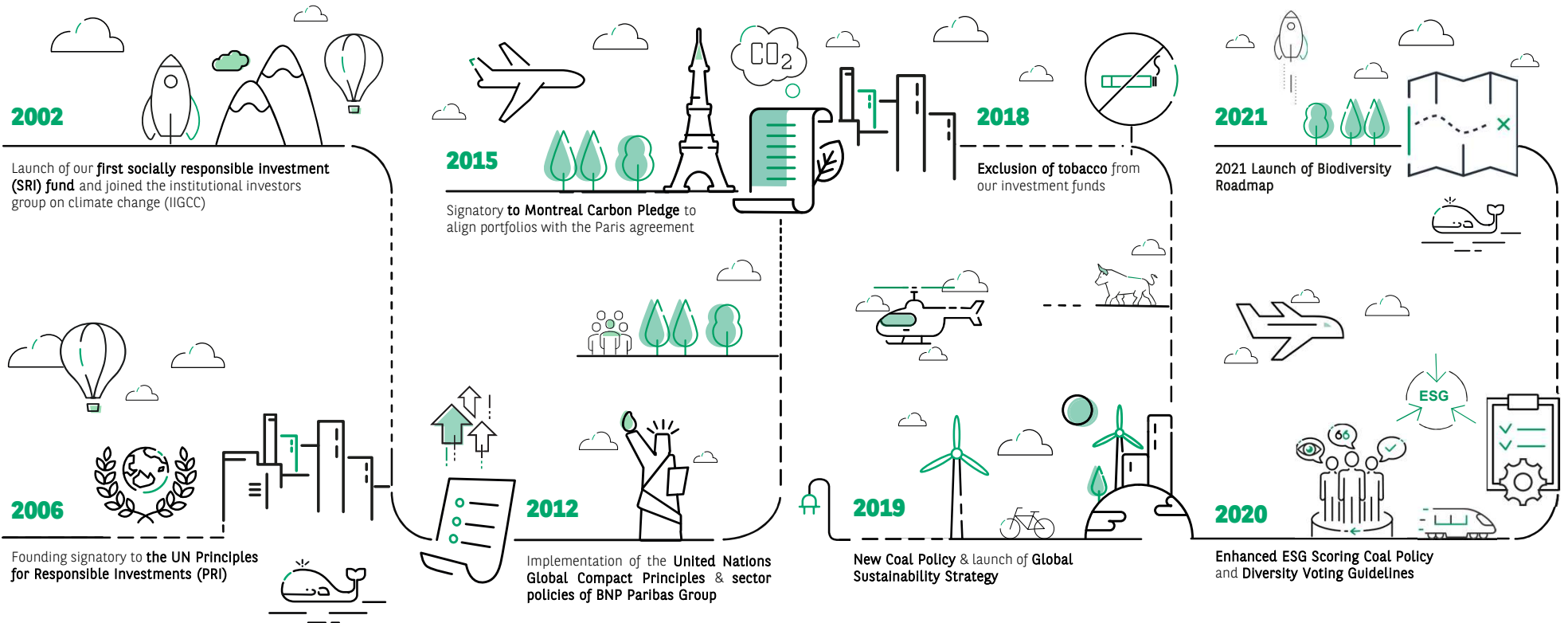
### BNP Paribas Rated

By Standard & Poor's (2), Moody's (3), and Fitch (4). Equity tier 1 capital of €83.3B

BNP Paribas Group backing provides **scale & resilience**. It gives us and our clients **a secure foundation** to invest and make a positive difference to people's future.

Source : BNP Paribas Asset Management and BNP Paribas Group as of July, 2022; (1) Joint Ventures included

# Committed to sustainable investing since 2002



Source : BNP Paribas Asset Management and BNP Paribas Group as of July, 2022

# BNP Paribas Energy Transition Strategy in Brief

## INVESTMENT OBJECTIVE

The BNP Paribas Energy Transition strategy seeks to achieve sustainable, above market returns over the longer term by investing in companies globally that are active in transitional and enabling environmental solutions that contribute to transitioning the global energy system through decarbonisation, digitalisation and decarbonisation

Asset Class	Focus	Fund size	Inception
Global Thematic	Energy Transition	€2.7bn	31 <sup>st</sup> Aug 2019
Tracking Error	Target return	No. of holdings	Market Cap Focus
Unconstrained MSCI ACWI (EUR) is the reference benchmark	+3% > MSCI ACWI (EUR)	~80	All-cap
Thematic Reference Indicator	Risk & Reward Rating	Regulatory category <sup>3</sup>	Eco Label
Invesco Wilderhill Clean Energy (PBW) iShares Clean Energy (ICLN)	1 2 3 4 5 6 7	SFDR Article 9, AMF Cat 1	Towards Sustainability <sup>2</sup>
Performance since Inception <sup>1</sup>	3 year performance annualised <sup>1</sup>	Investment Experience <sup>1</sup>	Portfolio Construction Team
+134.95% MSCI ACWI (EUR) +45.62%	+39.85% Benchmark +13.96%	Avg. > 22 years	Ulrik Fugmann, Edward Lees

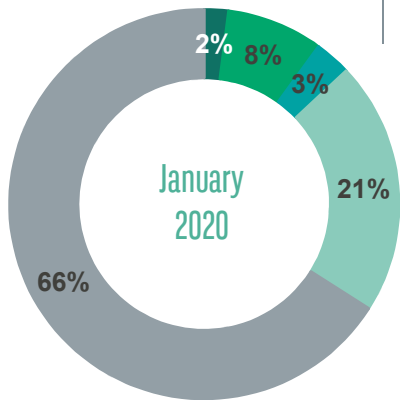
1. BNP Paribas Asset Management, 31 April 2022. Past performance is not indicative of future performance. Denominated in EUR. Classic shares net of all fees. These internal guidelines are mentioned for your information only and are subject to change. Prospectus guidelines and the KIID are leading. Experience relating to the listed equity investment team.

2. Created by the Belgian federation of the financial sector in 2019 (Febelfin), the Towards Sustainability label was designed as a standard or quality standard that all funds claiming to be sustainable, socially responsible, or ethical must respect. It aims to become a market standard, at least for Belgium. More information is available on the <https://www.towardsustainability.be/>

3. European regulation (UE) 2019/2088 *Sustainable Finance Disclosure* (SFDR) : article 9 (product with a sustainable investment objective), article 8 (product promoting environmental or social characteristics), article 6 (no ESG integration in the product). AMF (Autorité des Aprilés financiers) : category 1 (approach based on significant commitment to management), category 2 (based approach not significantly engaging), category 3 (approach not meeting central or reduced communications standards)

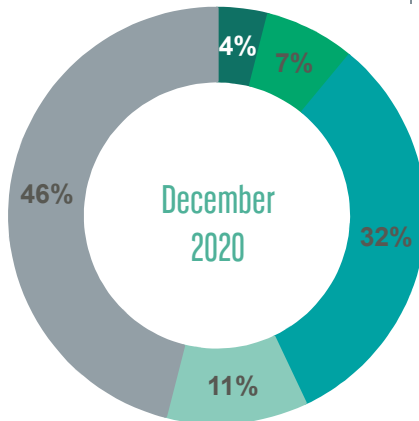
# Why the energy transition theme?

**34%** Of CO<sub>2</sub>e under a net-zero discussion



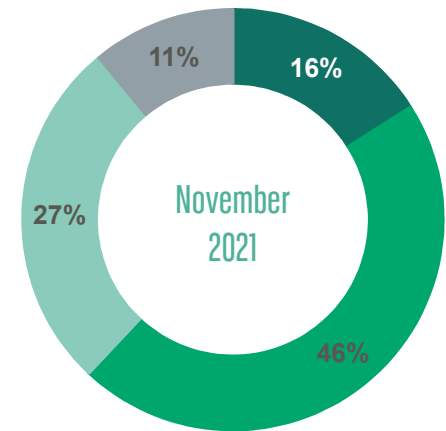
x2

**54%** Of CO<sub>2</sub>e under a net-zero discussion



x4

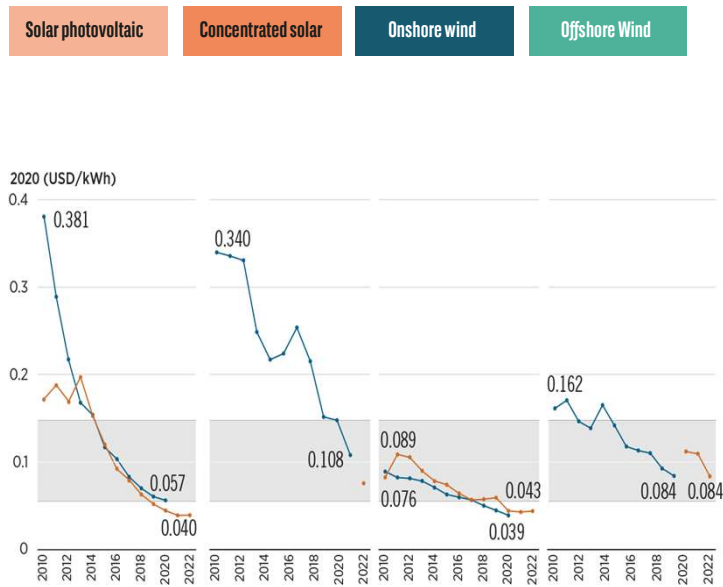
**89%** Of CO<sub>2</sub>e under a net-zero discussion



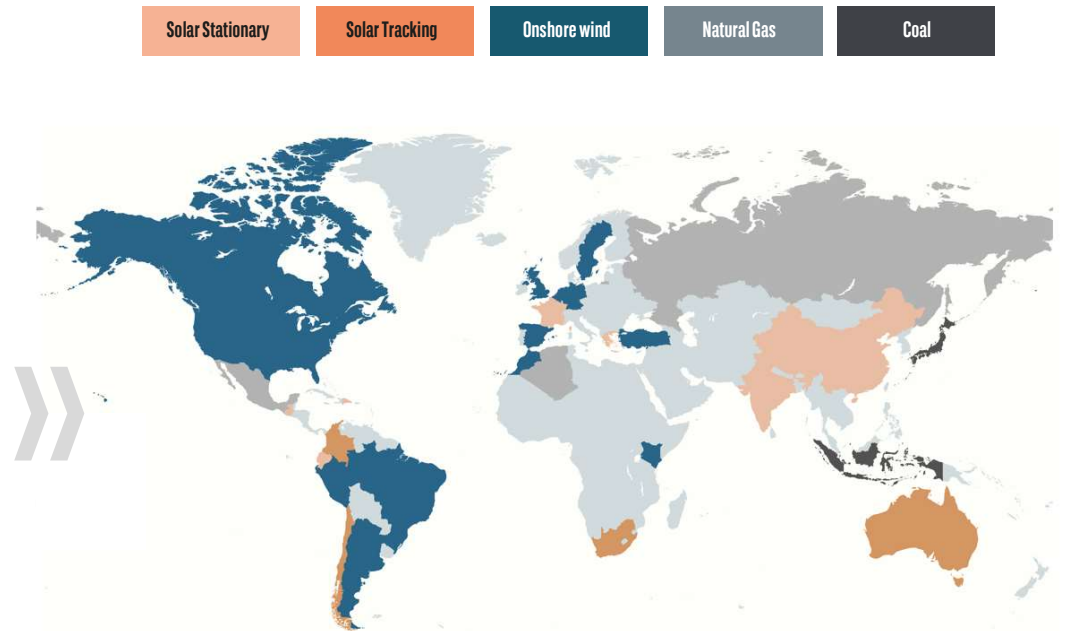
Source: BloombergNEF, 2022

■ Legislated ■ Government Position ■ In Legislative Process ■ Under Discussion ■ No Target

# Low carbon technologies are increasingly competitive



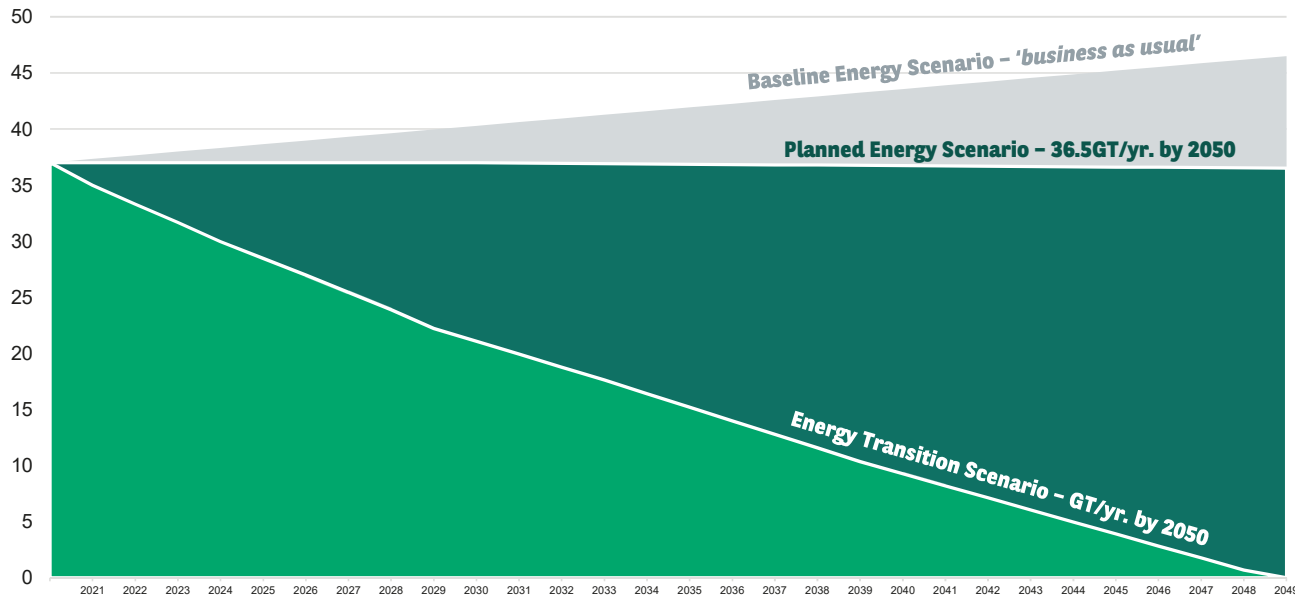
Source: World Energy Agency, 2022



Source: BloombergNEF, 2022

# Transitioning the Global Energy System is a \$115trn opportunity

## ANNUAL ENERGY-RELATED CO<sub>2</sub> EMISSIONS (GT/YR)



**\$55trn**

### Planned Energy Scenario

The path using all targets from the Paris Agreement up to 2020

+

**\$60trn**

### Incremental Investment

Required from 2020–2050 to be well below 2°C and towards 1.5°C during this century

=

**\$115trn**

**Energy Transition Opportunity**

## Cumulative Investment allocation by theme (2020 – 2050)



Source: IRENA, International Renewable Energy Agency, World Energy Transitions Outlook, Mar 2021.

## 2022 catalysts for the energy transition theme

### Inflation Reduction Act (IRA) July 2022

- Provides over \$400 billion in support for low carbon technologies, mainly through tax credits.
- It will put America back on track to slash US greenhouse gas emissions at least 50% by 2030
- This is on top of the Bipartisan Infrastructure Law which was passed last November and directed \$80 billion toward energy transition technologies.

### Fit for 55 / Carbon EU ETS Reform

- As an intermediate step towards climate neutrality in 2050, the EU has raised its 2030 climate ambition, committing to cutting emissions by at least 55% by 2030.
- It's 5 key elements are;
  - 1) emission caps for power plants and factories
  - 2) stricter national limits on CO<sub>2</sub>e emissions from "non-ETS" sectors
  - 3) Stricter EU caps on car emissions
  - 4) 40% of consumers energy from renewables by 2030
  - 5) a carbon border adjustment mechanism.

### Net metering – NEM 3.0

- On July 13, California proposed to limit the sale of excess electricity produced by individuals to the public grid
- Individuals would get less credit for their electricity and would have to pay a new public grid connection fee (\$ 40 per month)
- However, the proposal will be voted on at the end of July 2022, the day on which the author of the proposal will no longer be part of the commission.
- This leaves room for a revalidation

### RePower EU

- 100 billion cumecs of Russian gas imports to be displaced within the year
- The proposal lays out that 50% of gas imports will be displaced by gas alternatives, primarily LNG. The other 50% will be from energy efficiency and low carbon alternatives such as hydrogen and sector coupling.
- Russia has since cut the gas pipeline to Europe.



# Running the fund – a partnership of 20 years in thematic investing



## Time-tested partnership

Co-heads have decades of investment management experience spanning multiple asset classes



## Thematic expertise


Extensive technical expertise in environmental solutions companies and markets




## Excellent performance

A strong track-record managing environmental market thematic investment strategies


### 2000-2005

 Goldman Sachs One Delta & Quant Strategies

### 2007-2012

 Founded Goldman Sachs Thematic Investment Group


### 2018-2019

 Founded environmental thematic platform, Sustainable Solutions

### 2005-2007

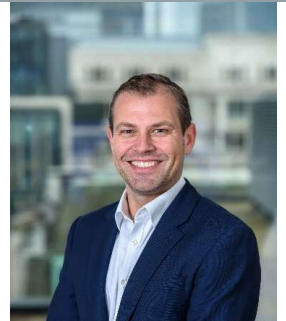
 Goldman Sachs Principle Strategies

### 2012-2017

 Founded North Shore Partners, acquired by Duet Group in 2015

### 2019 -

 Founded Environmental Strategies Group, BNPP AM



Co head, Ulrik Fugmann



Co-head, Edward Lees

Note: Timeline represents groups in which Edward Lees and/or Ulrik Fugmann were part of during their tenure at GS  
 Note: Trademark, copyright, and other intellectual property rights are and remain the property of their respective owners

# The investment team and investment philosophy



## ENVIRONMENTAL STRATEGIES GROUP

### CHIEF INVESTMENT OFFICERS



**Ulrik Fugmann**

**Co-CIO & Senior PM**  
22 years experience, **ESG Champion**  
London



**Edward Lees**

**Co-CIO & Senior PM**  
26 years experience, **ESG Champion**  
London

### RESEARCH TEAM



**Alex Scott**

**Equity Research Analyst, CFA**  
10 years experience  
London



**Vanessa Cheung**

**Equity Research Analyst, CFA**  
5 years experience  
London



**Somesh Batra**

**Equity Research Analyst**  
6 years  
London



**Joseph Henson**

**Quantitative Research Analyst, PhD**  
7 years experience  
London

### ENVIRONMENTAL & INVESTMENT SPECIALIST



**Gabrielle Kinder**

**Environmental & Investment Specialist**  
6 years experience, **ESG Champion**  
London

## OUR PHILOSOPHY

- **Rising demand for environmental solutions** should deliver **superior impact and share price performance over the longer term** for transitioning and enabling environmental solutions companies.
- Identify stocks with **high thematic revenue exposure** whilst applying innovative financial analysis integrating technology life cycles to capture **long term sustainable returns**
- An impact reporting framework that **demonstrates the environmental impact** as well as incorporating long-term ESG risks

## OUR OBJECTIVE

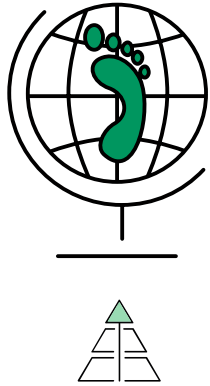
**Achieving superior investment performance** to meet our clients' expectations with portfolios **evidencing tangible environmental impact to society.**



**Ranked # 1 best long only strategy in 2021\***  
**Winner, Thematic Impact for Natural Resources Singapore\*\***

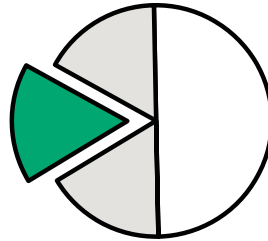
# Thematic investing vs. best-in-class low carbon – what is your target portfolio outcome?

## Thematic environmental solutions portfolio developing, deploying and scaling environmental impact products and services



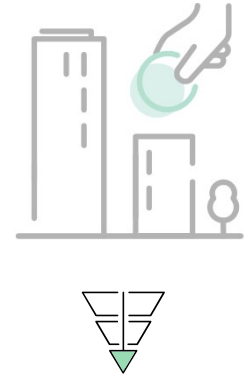
"...residential solar company added 34,000 customers shifting out of fossil fuels..."

- ✓ **High environmental exposure**
- ✓ **High environmental impact**
- ✓ **High tracking error**
- ✓ **High risk/reward**



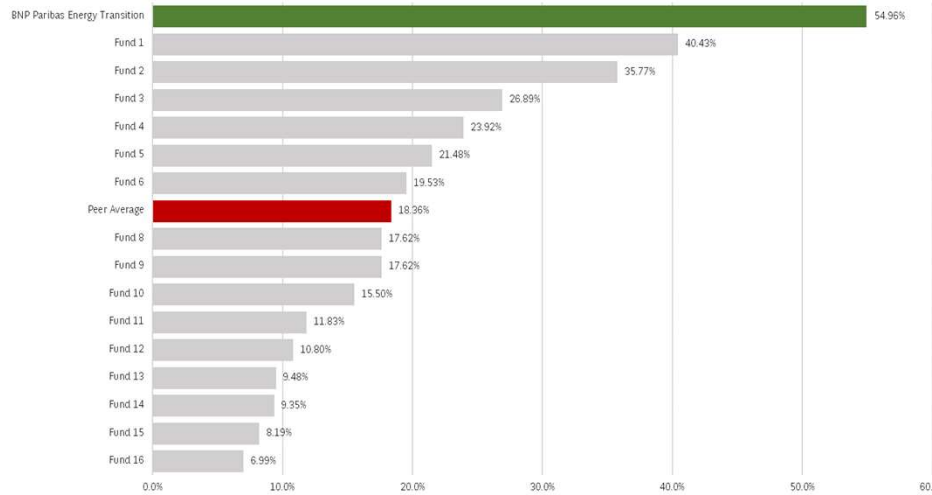
## Benchmarked low carbon portfolio investing in best-in-class companies across industries

"...oil & gas company lowered its carbon footprint by 4% in 2021..."



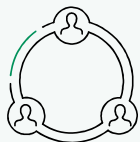
- ✓ **Low environmental exposure**
- ✓ **Low environmental impact**
- ✓ **Low tracking error**
- ✓ **Low risk reward**

**Portfolio exposure to Clean Energy, Water & Environmental Control,**  
Morningstar: Alternative Energy



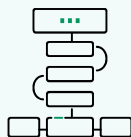
Source: Bloomberg, Industry allocation based on Bloomberg Industry Classification System across all fund holdings

# Why we are different



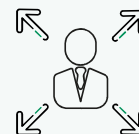
## INVESTMENT TEAM

Co-heads with **+20Y of shared public and private thematic investment experience** + diverse fundamental research & quantitative analyst team



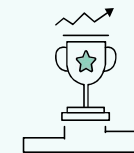
## TECHNICAL EXPERTISE

Deep **technical know-how** across multiple environmental solutions technologies with strong networks spanning various industries



## ACTIVE MANAGEMENT

**High active share in a balanced portfolio** that dynamically maximises portfolio risk / reward with strong buy and sell discipline



## ALL CAP APPROACH

Investing across **large as well as fast growing mid & small caps**. Active in primary issues to maximise impact and unlock significant return potential in innovative "unicorn" companies



## PORTFOLIO DIVERSIFICATION

**Diversification overlays across style factors, geographies, sectors, technologies, and size** to control for risk factors



## THEMATIC ALIGNMENT

Quantifiable **environmental benefits** with significant avoided carbon emissions mapped to **UN Sustainable Development Goals and EU Taxonomy**



## QUANTITATIVE OVERLAY

**Dedicated quant team** developing proprietary quantitative tools for **alpha creation, risk management and portfolio construction**



## ENVIRONMENTAL IMPACT

Leverage **Sustainability Centre for ESG analysis, engagement and voting**. Independently review and integrate alternative data sets for environmental analysis with quarterly Climate & ESG reporting

Source: BNP Paribas Asset Management, July 2022. There is no guarantee that the performance objective will be achieved.

# Our proprietary revenue aligned investment universe

1,200 revenue aligned companies globally focused on transitional and enabling environmental solutions that contribute to transitioning the global energy system

## RENEWABLE ENERGY PRODUCTION



### DECARBONISING

the energy system through production of renewable and transitional energy

- Biofuel & Biomass
- Clean Fuels
- Combined Heat & Power
- Fuel Cells & Hydrogen
- Geothermal Power
- Hydro Power
- Ocean & Tidal Power
- Renewable Project Financing
- Solar Power
- Wind Power
- Integrated Power

## ENERGY EFFICIENCY, TECHNOLOGY & MATERIALS



### DIGITALISING

the energy system through electrification, efficiency and technology

- Advanced & Light Materials
- Battery Materials
- Emission Efficiency
- Energy Optimisation & Controls
- Green Minerals & Metals
- Industrial Automation
- Technology Software & Process
- Technology Hardware
- Power Storage
- Sustainable Chemicals
- Green Buildings
- Green Building Equipment & Materials

## ENERGY INFRASTRUCTURE & MOBILITY



### DECENTRALISING

the energy system through new infrastructure, distributed energy and battery storage

- Power Infrastructure & Equipment
- Alternative Bus & Coach
- Alternative Shipping
- Alternative Trucking
- Alternative Vehicles
- Motorbikes & Bicycles
- Electric Vehicle Batteries
- Railway Transportation
- Alternative Aviation & Aerospace

Source: BNP Paribas Asset Management, July 2022

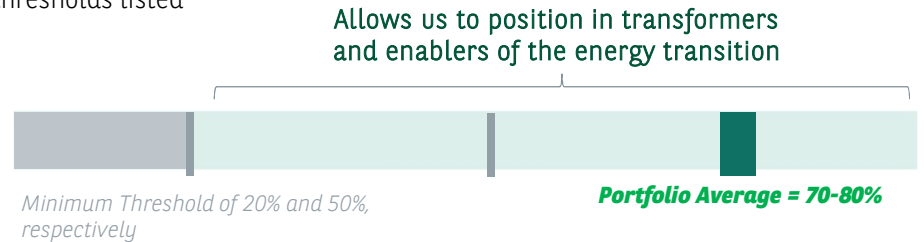
# UN Sustainable Development Goals mapping methodology

The BNP Paribas Energy Transition strategy significantly contributes to the targets behind of three of the seventeen UN Sustainable Development Goals



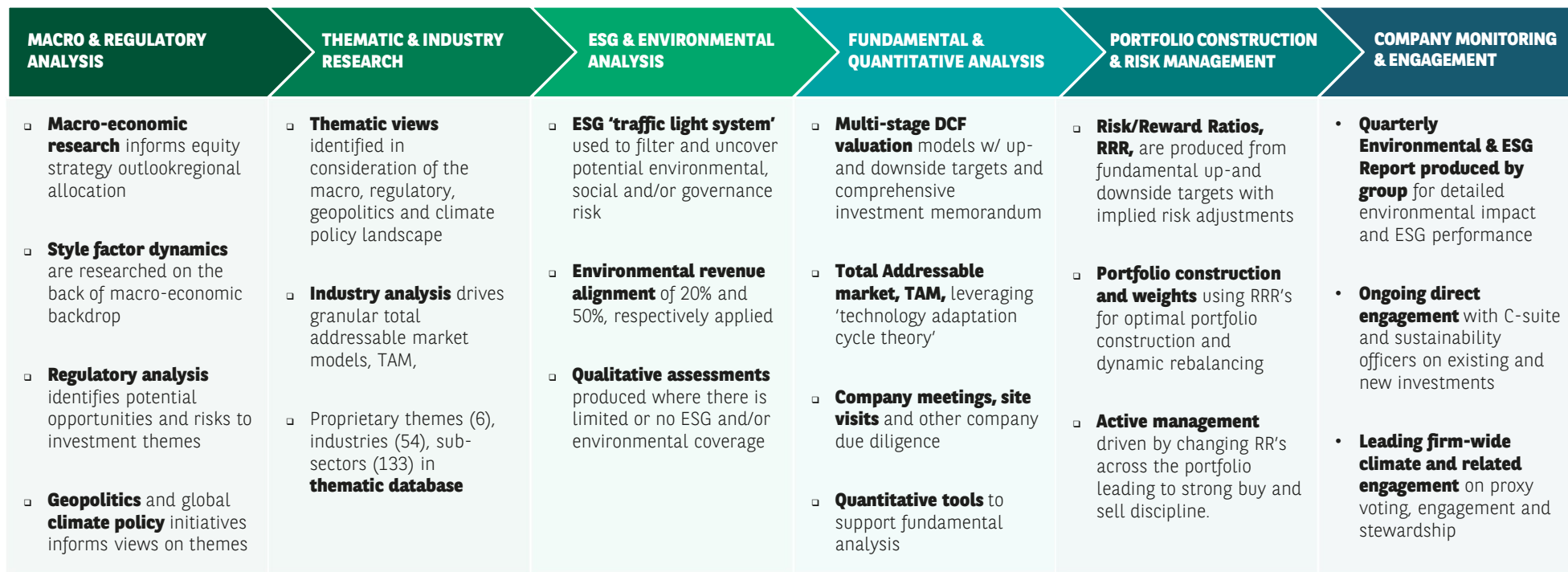
Companies are considered to be providing environmental solutions ('ES') if any one of the thresholds listed below is >20% for 80% of the portfolio and 50% for the remaining 20% of the portfolio:

- 1** **ES Revenue** / **Total Revenue**
- 2** **ES CapEx** / **Total CapEx**
- 3** **ES Opex** / **Total Opex**



Source: BNP Paribas Asset Management, July 2022 & <https://sdgs.un.org/goals>

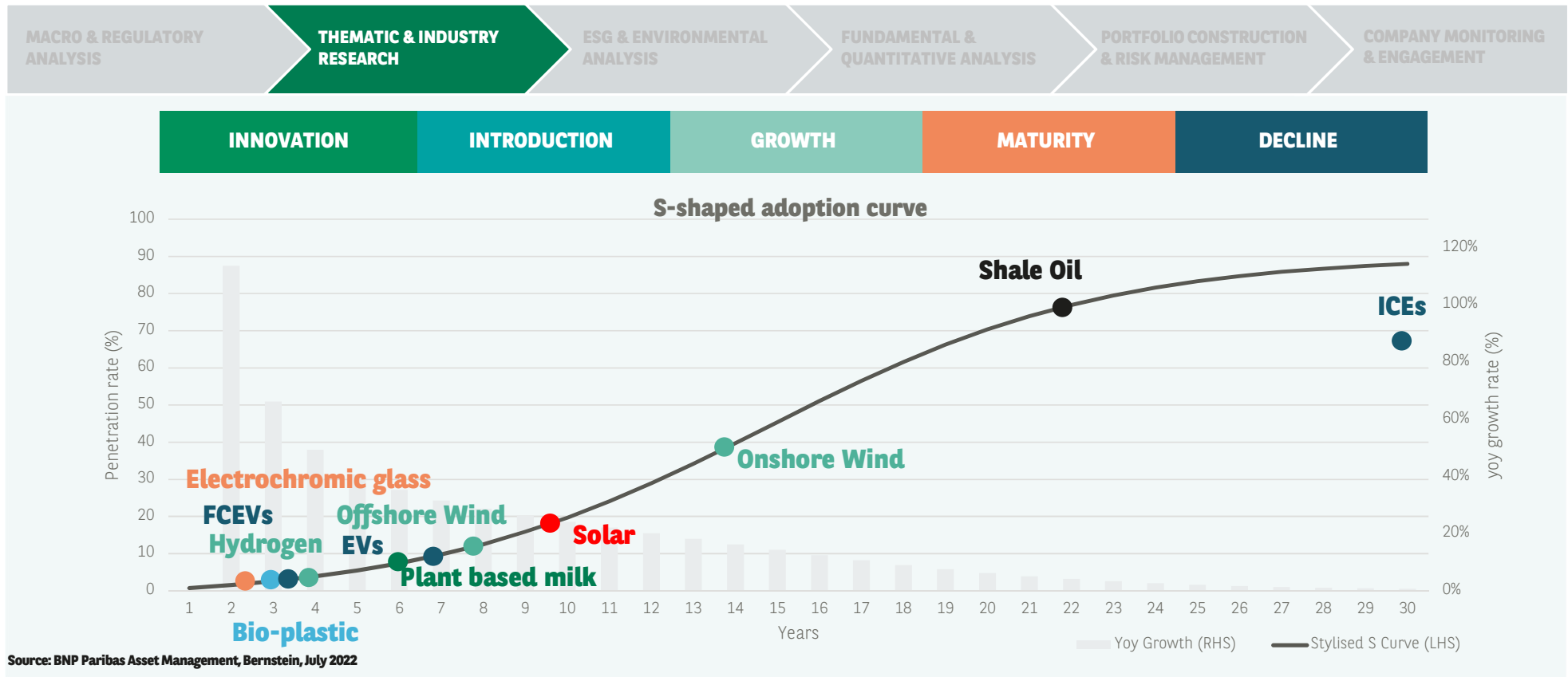
# Investment Process



Generating high conviction ideas through a disciplined and repeatable approach

Source: BNP Paribas Asset Management, July 2022

# S-shaped 'diffusion of innovation model' – where are we today?





# Why do we use TAMs in our investment approach?

MACRO & REGULATORY ANALYSIS

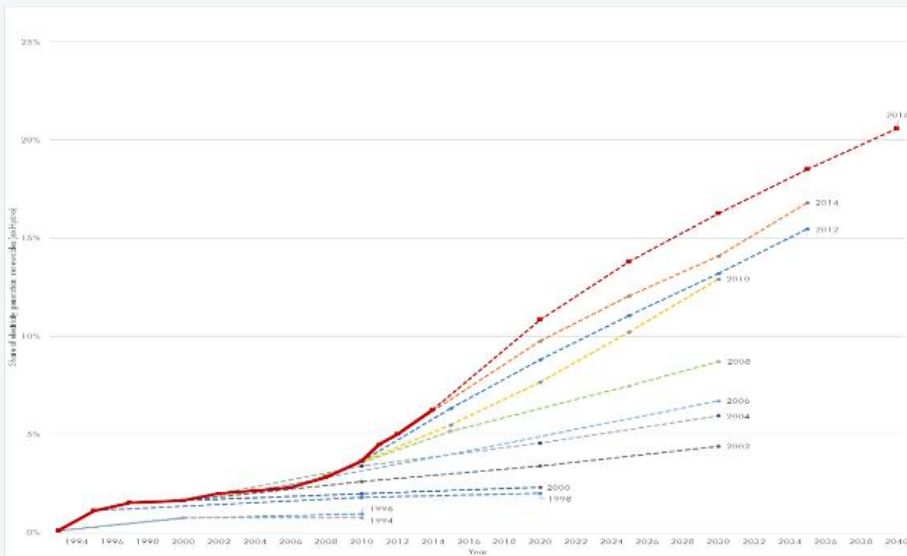
**THEMATIC & INDUSTRY RESEARCH**

ESG & ENVIRONMENTAL ANALYSIS

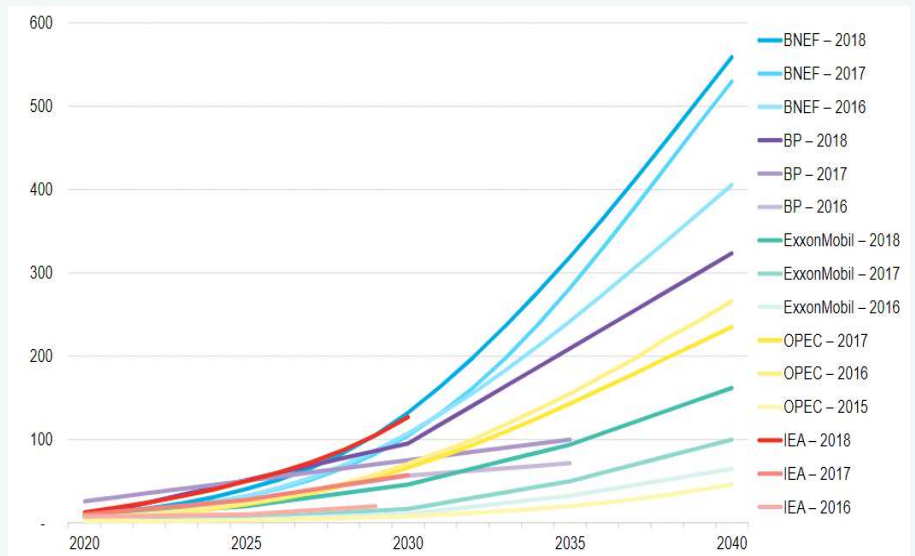
FUNDAMENTAL & QUANTITATIVE ANALYSIS

PORTFOLIO CONSTRUCTION & RISK MANAGEMENT

COMPANY MONITORING & ENGAGEMENT



International Energy Agency, 2020



BloombergNEF, 2021

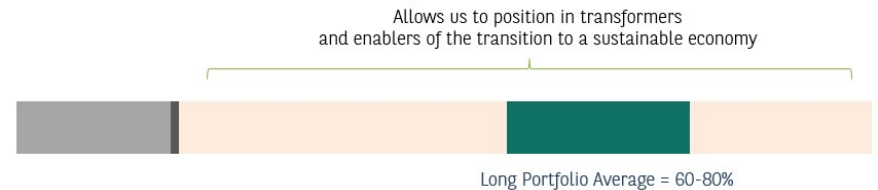
# Integrating ESG & Environmental Analysis



## ENVIRONMENTAL HURDLE RATE



ES = Environmental Solution  
Source: BNP Paribas Asset Management, June 2022



## OTHER SUSTAINABLE REGULATIONS & FRAMEWORKS



UN Global Compact



Febelfin Towards Sustainability



AMF Category 1



UN Sustainable Development Goals



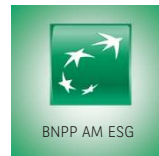
EU Taxonomy for Sustainable Activities



BNPP Asset Management Responsible Conduct Policy (RBC)



OECD Guidelines for Multinational Enterprises



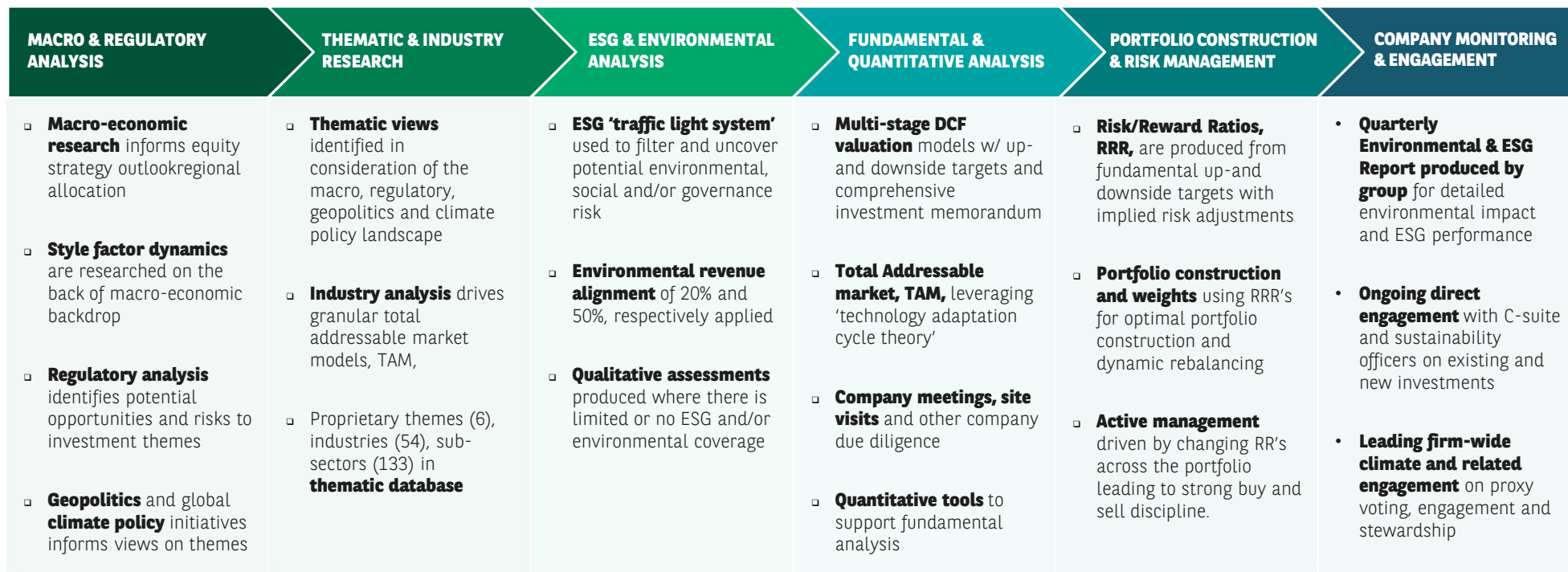
BNPP Asset Management ESG 10<sup>th</sup> Decile



Article 9, Sustainable Finance Disclosure Regulation



# Investment Process



Generating high conviction ideas through a disciplined and repeatable approach

Source: BNP Paribas Asset Management, July 2022

# Tying it all together – sources of alpha

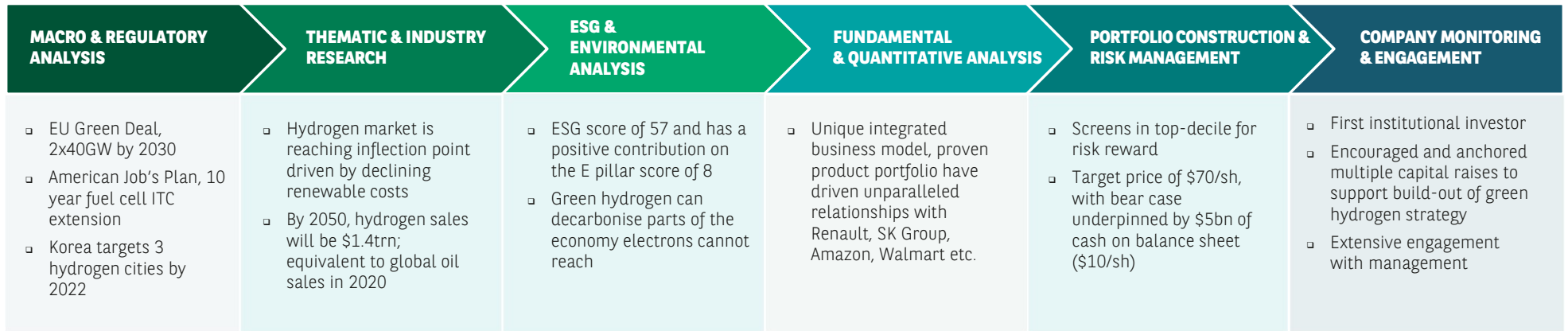
Alpha signals derived from multi-disciplinary and structured investment process focused on conviction & depth



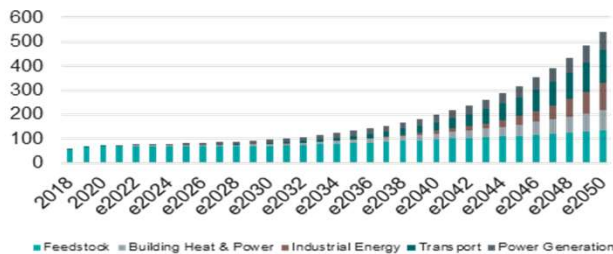
This is for illustrative purposes only and could be subject to change and should not be used as a basis for making any specific investment, business or commercial decisions.  
Source: BNP Asset Management, July 2022

# Plug Power: a green hydrogen champion

**Plug Power** (Ticker: PLUG US) is the global pioneer of fully integrated turnkey fuel cell solutions. From producing hydrogen through the deployment of in-house electrolyser technology through to the maintenance of in-the-field fuel cell systems, Plug Power is leading the way in creating commercially viable hydrogen fuel cell markets. The position was initiated in Q4 of 2019. Market cap is \$13.7B.



Global hydrogen sales by end markets (MT)



**ENVIRONMENTAL SPONSORSHIP REPORT**

**Business Overview:** PLUG POWER INC | **Ticker:** PLUG US Equity | **Price:** 27.24 | **Target Price:** 73.2 | 168.7% | **Date last modified:** AS 08/03/2021

Plug Power, Inc. designs, develops, manufactures and commercializes fuel cell systems for electric lift trucks and materials handling equipment. The Company offers its products globally to retail, grocery, and institutional food distribution centers, as well as manufacturing facilities.

Summary of ratios	Management Overview
<b>Primary Exchange:</b> NASDAQ OMX	<b>CEO:</b> Andrew March 'Andy' Gifford
<b>Market Cap (\$bn):</b> 13.7	<b>Chairman:</b> Paul B Middleton
<b>ADTV (\$m):</b> 1895	<b>Investor Relations:</b> Roberto F. Friedlander
<b>Free float:</b> 99.2%	<b>IR Contact:</b> <a href="mailto:ir@plugpower.com">ir@plugpower.com</a>
<b>Short Interest:</b> 8.78%	<b>Employees ('000):</b> 0.8
<b>Sector:</b> Industrials	<b>Next update:</b> Q1 07/25/2021
<b>Industry:</b> Electrical Equipment	<b>Date:</b> 06/04/2021
<b>Sub-Industry:</b> Electrical Components	<b>Market:</b> Gains

**Investment Overview**

**Thesis 1:** We are on the cusp of exponential growth in the hydrogen market  
**Thesis 2:** PLUG is the market leader, and now US national champion  
**Thesis 3:** Unique business model - no starting up, no variable, recurring value

**Catalyst:** 2022 revenues 2-4% low, Earth Day, new data centre and HGV customer/partnerships

**Risks:** Accounting, technology, too much too quickly

Valuation Summary	Target Price	Upside	Peak
1.6% 2030 mkt share, 30% EBITDA	Bull	94.1	245.6%
1.6% 2030 mkt share, 25% EBITDA	Base	62.7	130.2%
1.0% 2030 mkt share, 15% EBITDA	Bear	9.7	-64.0%
	TP	73.2	168.7%
	Downside	9.7	64.5%

**Ownership summary**

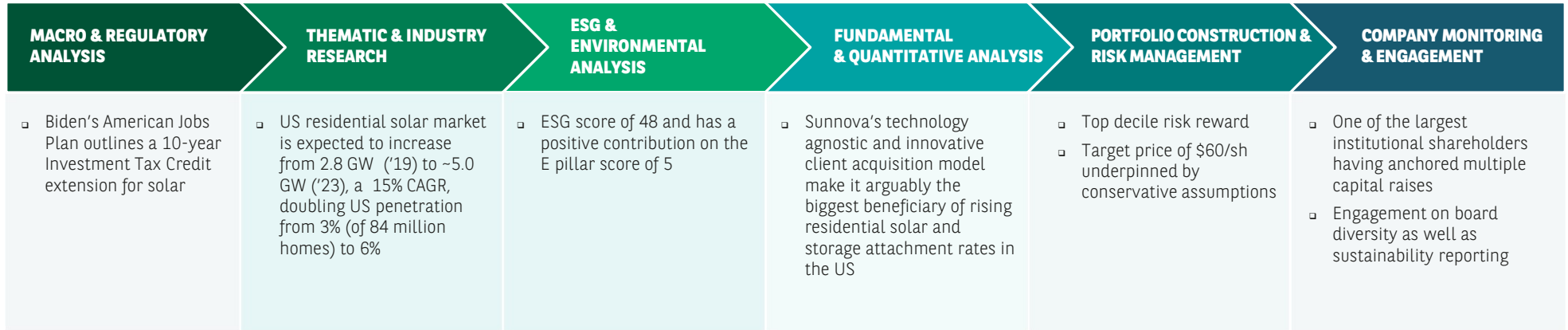
Holder	Percentage	Change
GRUPE ENERGY CAPITAL	10.0%	202.0%
VANGUARD GROUP	8.2%	0.0%
BLACKROCK	6.7%	0.0%
DE SHAW & CO INC	3.2%	4.6%
FMR LLC	2.8%	67.8%
ALLIANCE BERNSTEIN	1.7%	71.6%
STATE STREET CORP	1.6%	3.9%
SIG HOLDING LLC	1.4%	28.3%



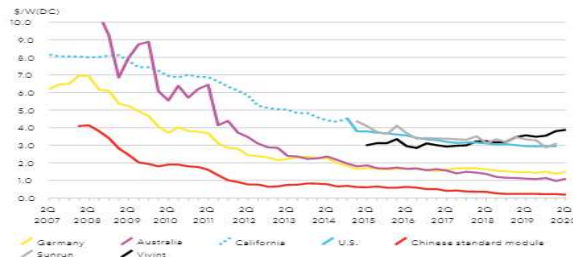
Source: Bloomberg. Data as at 31<sup>st</sup> July 2022. Total subject to rounding. The above-mentioned companies are for illustrative purposes only, are not intended as solicitation of the purchase of such securities, and does not constitute any investment advice or recommendation. Source: July, 2022. Trademark, copyright, and other intellectual property rights are and remain the property of their respective owners.

# Sunnova: decarbonising, digitalising and decentralising power markets

**Sunnova Energy International** (Ticker: NOVA US) is a technology-agnostic leading residential solar and energy storage service provider, with customers across the U.S. and its territories, offering solutions for financing, installation and servicing of US residential solar rooftop systems. The position was initiated in Q2 of 2020. Market cap is \$4.1B.



Residential PV system prices in different markets



**Business Overview:** SUNNOVA ENERGY | **Ticker:** NOVAUS Equity | **Price:** 34.66 | **Target Price:** 60.0 73.1% | **Date last modified:** 45 08/09/2021

Sunnova Energy International Inc. provides renewable energy solutions. The Company offers solar battery storage units, as well as maintenance, monitoring, and management services. Sunnova Energy International serves customers in the United States and Northern Mariana Islands.

Summary of offices		Management Overview	
Primary Exchange	New York	CEO	William Berger "Johi"
Market Cap (\$B)	3.9	COO	Robert Lane
ADTV (\$M)	355	Investor Relations	Rodney Mahan
Free Float	72.7%	IR Contact	Rodney.Mahan@sunnova.com
Short Interest	2.68%	Employees ('000)	6.4
Sector	Energy		
Industry	Renewable Energy	Next update	Date
Sub-industry	Renewable Energy Propt. Storage	Q1 28/04/2021	18/09/2021

**Investment Overview**

**Theme 1** US residential solar market is expected to increase from 2.8 GW ('19) to ~5.0 GW ('23), a 15% CAGR

**Theme 2** Recent issues with grid outages have accelerated attach rates for storage

**Theme 3** Inventory situation and technology agnostic platform is a benefit in semi-conductor world

**Catalyst** Continued volume and earnings delivery; increasing storage attach rates at 1Q, ITC conclusion

**Risks** Semi shortages; integration risks with SunStreet; interest rates above 2.5%

Revenue		Ownership summary		Holding		Change	
SEC CONTROLCD ITC	13.2%	BLK/ROCK	10.3%	16.8%			
VANGUARD GRO LP	4.2%			45.1%			
ED MOUNTAIN LTD	3.8%			5.0%			
INMSCO LTD	3.2%			44.3%			
NEWLIGHT PARTNERS LP	3.2%			-114.7%			
SVENSKA HANDELSBANK	3.0%			0.2%			
BNP PARIBAS	2.8%			38.3%			

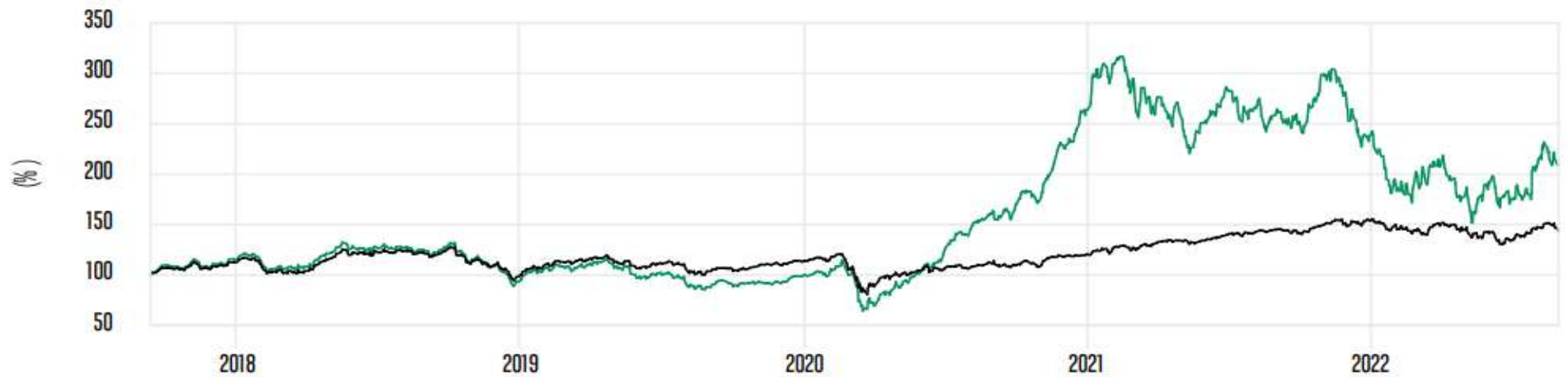
Valuation Summary		Target Price		Upside		Prob.	
ITC benefit → 330k customers	Buy	60	96.3%	25.0%			
30k customers in 2023	Buy	56	61.6%	59.0%			
270k customers, lower attach rate	Buy	25	-27.9%	25.0%			
	TP	60	73.1%				
	Downside	25	-27.9%				



Source: Bloomberg. Data as at 31<sup>st</sup> Mar 2021. Total subject to rounding. The above-mentioned companies are for illustrative purposes only, are not intended as solicitation of the purchase of such securities, and does not constitute any investment advice or recommendation. July, 2021. Trademark, copyright, and other intellectual property rights are and remain the property of their respective owners.

# Performance to date

## PERFORMANCE (CUMULATIVE OVER 5 YEARS) (EUR) (NET)



Performance (%)	August	3M	YTD	Since Inception
<b>BNP Paribas Energy Transition</b>	1.17	11.94	-11.87	137.90
Invesco Wilderhill Clean Energy Index	2.81	8.28	-18.64	105.44
MSCI ACWI (EUR)	-2.27	0.84	-6.53	39.82

# Top 10 Holdings

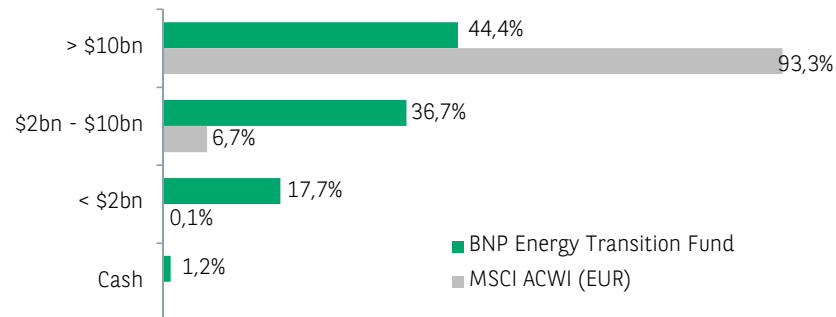
Top 10 Holdings	Theme	Region	Weight (%)
Sunnova Energy International	Renewable Energy Production	Americas	10.0%
Sunrun	Energy Infrastructure & Mobility	Americas	9.9%
Plug Power	Renewable Energy Production	Americas	9.7%
Generac Holdings	Energy Infrastructure & Mobility	Americas	5.4%
LG Chem	Renewable Energy Production	Asia	5.4%
SolarEdge	Renewable Energy Production	EMEA	4.4%
Shoals	Renewable Energy Production	Americas	3.0%
Fluence Energy	Energy Efficiency, Technology & Materials	Americas	2.7%
Vestas Wind	Renewable Energy Production	EMEA	2.7%
ReNew Energy Global	Renewable Energy Production	Asia	2.6%
<b>Top 10 Weight:</b>			<b>55.8%</b>
<b>Total # Holdings in Portfolio:</b>			<b>76</b>

Source: Bloomberg LP. Data as of 31<sup>st</sup> July 2022. Total subject to rounding. The above-mentioned companies are for illustrative purposes only, are not intended as solicitation of the purchase of such securities, and does not constitute any investment advice or recommendation.



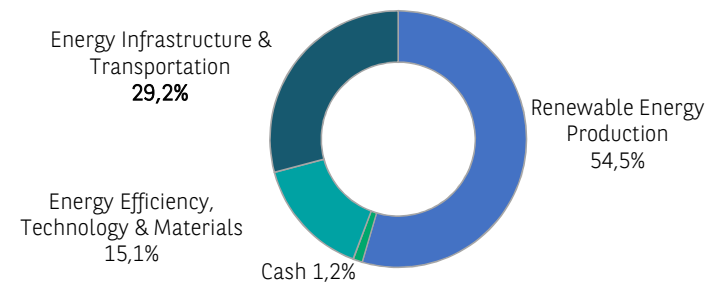
# Portfolio Exposure

## All-Cap diversification (% allocation)



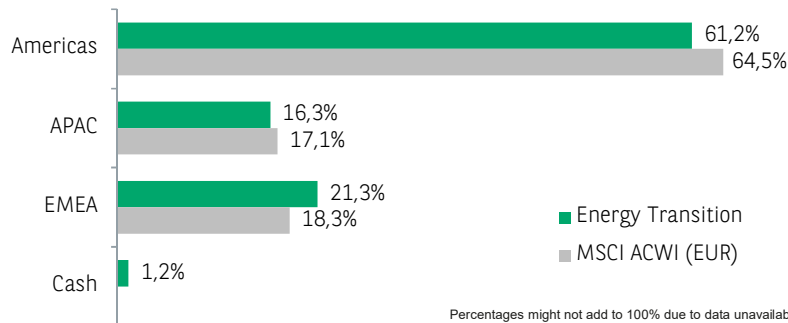
Percentages might not add to 100% due to data unavailability

## Thematic diversification across Energy Transition (% allocation)



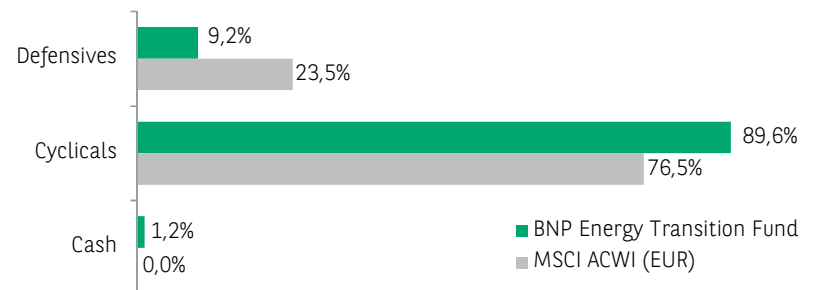
Percentages might not add to 100% due to data unavailability. Note a number of companies are increasingly operating across themes.

## Regional Exposure<sup>1</sup> (% allocation)



Percentages might not add to 100% due to data unavailability

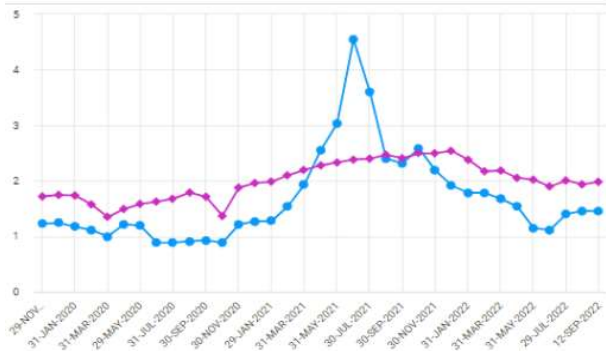
## Exposure to cyclical and defensive end markets<sup>2</sup> (% allocation)



Source: Bloomberg LP. Data as of 31<sup>st</sup> July 2022. <sup>1</sup>Geographic allocation by country of listing, MSCI classification if available. Data July not add up to 100% due to rounding. <sup>2</sup>Stability of demand during economic upturns and downturns. This is for illustrative purposes only and should not be used as a basis for making any specific investment, business or commercial decisions.

# Valuations lower than before the environmental rally of 2021

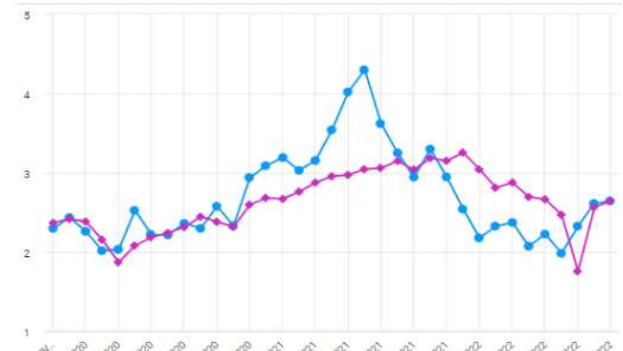
4) P/S FY0 Over Time (Long Equities)



2) P/E FY2 Over Time (Long Equities)



3) P/B FY0 Over Time (Long Equities)



5) P/S Trailing 12 Months (Long Equities)



1) P/E FY1 Over Time (Long Equities)



6) P/B FY1 Over Time (Long Equities)



Source: BlackRock Aladdin, September 2022

# Environmental Performance

## ENVIRONMENTAL IMPACT R BNP PARIBAS ENERGY TRANSITION

BE PART OF THE JOURNEY

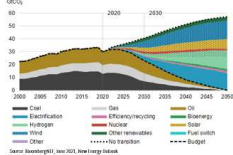
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### CARBON

#### THE INVESTMENT CASE FOR DECARBONIZATION

Energy Transition invests in technologies which decarbonize the way we consume energy across the economy, electricity use, manufacturing and industry. Adoption of low carbon technologies is forecasted to grow into an estimated \$275 trillion of investment by 2050 (McKinsey & Co, 2021). BNP Paribas Energy Transition has joined to capture thematic alpha over the longer term and outperform broader markets. The portfolio has a full focus of regulatory support, consumer demand, declining clean technology costs and scientific advice for carbon emissions and the decarbonization impact of the portfolio.

#### Long term outlook for low carbon technologies



#### PORTFOLIO CARBON METRICS

Carbon Intensity Scope 1 & 2 Tonnes CO <sub>2</sub> e/M€ Revenue	143 M€Tonne CO <sub>2</sub> e	This intensity metric includes Scope 1 & 2, these are the direct emissions from a demonstrator used to measure, in line with comparators between companies and the intensity has decreased on last quarter 1 grams. M€Tonne CO <sub>2</sub> e carbon intensity has improved, a lower mark on all gas and industries have improved. These are the Scope 1 and Scope 2 emissions have increased over the last two months but remained strong.
GHG Emissions per €M Invested Scope 1 & 2 Tonnes CO <sub>2</sub> e/M€ AUM	171 M€Tonne CO <sub>2</sub> e	This is the total renewable energy generated from coal, oil and gas. Energy Transition portfolio has a strong bias towards generation to growth in the portfolio, you please set plans for their conventional gas.
Renewable vs Fossil Generation AUM	4.03x	Coal is by far the driver of the portfolio. It almost double the amount of greenhouse gas compared to energy for nuclear, coal generation or all energy generation.
Cost Exposure % Cost vs Total Energy Generation AUM	6.0%	This compares the total AUM of Energy M€Tonne CO <sub>2</sub> e. The cost exposure to the next distance each year.
Relative Avoided Emissions Scope 1 & 2 Tonnes CO <sub>2</sub> e/M€ AUM	3,900 M€Tonne CO <sub>2</sub> e	This compares all of the estimated Scope 1 & 2 avoided emissions. Using the most emissions across the value chain are used designed to customers and for each unit of electricity generated on the grid we compare with a higher environmental footprint with a higher environmental footprint measure, for a good proxy. Here they are reported against the most
Absolute Avoided Emissions Scope 1 - 4 Tonnes CO <sub>2</sub> e/M€ AUM	137,320 M€Tonne CO <sub>2</sub> e	

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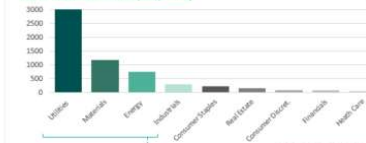
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### CARBON

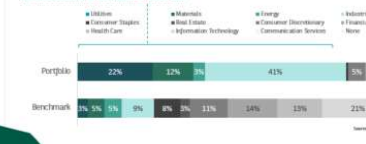
#### SCOPE 1 & 2 EMISSIONS

Scope 1 & 2 emissions are those emitted from a company's owned buildings, facilities and power usage. They are useful because they represent carbon metrics however they do not include Scope 1 & 2 emissions. The Energy Transition portfolio of emitting or even highly emitting profile than its reference index, the MSCI ACWI. This is because the Energy Transition portfolio is more aligned with decarbonization opportunities such as energy transition. MSCI ACWI generally has a higher exposure to sectors with a high carbon emissions, health care and financials which by nature have a higher carbon footprint. Below is a chart from the ICA sectors and how those compare against the sector exposure for Energy Transition and the MSCI ACWI. Most on Scope 1 and 2.

#### SCOPE 1 & 2 CARBON INTENSITY PER SECTOR (CO<sub>2</sub>e/€ revenue)



#### SECTOR EXPOSURES OF ENERGY TRANSITION & MSCI ACWI



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### ENVIRONMENTAL FOOTPRINT

#### PORTFOLIO ENVIRONMENTAL INTENSITY METRICS (AS OF 30.06.2022)

Weighted water use intensity Tonnes CO <sub>2</sub> e revenue	3,010 M€Tonne CO <sub>2</sub> e	Weighted water use intensity (m³/M€). For the portfolio we use an emissions-based approach to allocate water to water footprint such as coal and hydro power production. It is beyond 2 requirements for all companies within the reference index, the MSCI.
Weighted waste intensity Tonnes CO <sub>2</sub> e revenue	13.11 M€Tonne CO <sub>2</sub> e	Weighted waste intensity. The portfolio has a higher weighted waste intensity than the reference index (MSCI ACWI) primarily due to a higher exposure into some early stage companies in emerging markets with lower recycling rates. This has significantly increased the average of the portfolio exposure. Clean water of the portfolio is much higher than the reference index (see below).
Weighted recycling intensity M€Tonne CO <sub>2</sub> e revenue	20.0 M€Tonne CO <sub>2</sub> e	Weighted recycling intensity (kg/M€). Reference index is MSCI ACWI exposure to circular economy companies such as battery recycling.
Total Pollutant Intensity €M environmental cost	1.72 M€Tonne CO <sub>2</sub> e	Weighted pollutant intensity (€M). Pollutant figures are estimated to quantify the impact of polluting substances (e.g. heavy metals) emitted into the atmosphere, terrestrial or aquatic ecosystems. The measurement can be related based on their respective weights. An 'x' also is related - quantified based on environmental cost.

#### ENVIRONMENTAL IMPACTS DELIVERED PER €10 MILLION INVESTED (AS OF 30.06.2022)

124 Hospitals Equivalent to 100 household's annual water consumption	Total water saved	3,299 MWh Equivalent to 894 household's annual energy consumption	Clean energy generated
39 tonnes Equivalent to 38 household's annual waste production	Total waste avoided	109 tonnes Absolute measure, not relative to index	Total waste recycled
7 €M avoided in damage to natural resources	Pollutant damage avoided		

Source: BNP Paribas, MSCI, and other data providers. All figures are estimates and subject to change. All figures are in M€ unless otherwise specified.

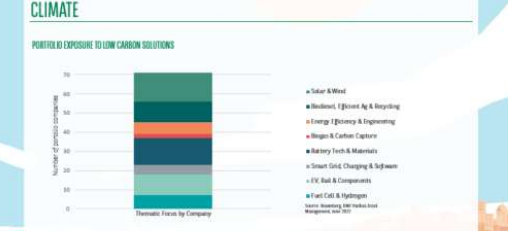
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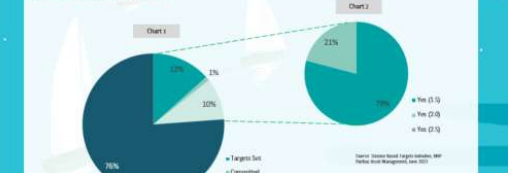
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### CLIMATE

#### PORTFOLIO EXPOSURE TO LOW CARBON SOLUTIONS



#### CLIMATE CHANGE RISK AND CLIMATE ALIGNMENT



Source: BNP Paribas, TCFD, and other data providers. All figures are estimates and subject to change. All figures are in M€ unless otherwise specified.

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# Environmental Performance

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ESG

TOP 10 HOLDINGS, ESG SCORE, SHARE OF GREEN REVENUE & SDG ALIGNMENT AS OF 30/06/2023

Top 10 Holdings	Weight	% Share of Green Revenues	ESG Score
Solar Power	9.2%	100%	Solar (pt)
Supernova Energy	8.2%	100%	Residential
Plug Power	7.9%	100%	Fuel Cells
Surren	4.0%	100%	Residential
Genecor	3.1%	100%	Back-up
US Chem	2.8%	20%	Batteries
Kellogg	2.8%	100%	Residential
Renew Energy Global	2.5%	100%	India sub
Enge	2.2%	20%	Europe
Enet	2.1%	20%	Europe
Total	58.2%		

Source: BNP Paribas Asset Management. Portfolio holdings are subject to change as they are rebalanced and should not be used for investment purposes. Data as of 30/06/2023.

APPENDIX

FORMULA SHEET

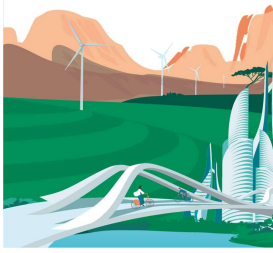
- Carbon Intensity** =  $\sum Weight\ (%) \times \frac{Company\ Direct\ Emissions\ (tCO_2e)}{Company\ Revenue\ (€M)}$
- GHG Emissions per €M Invested** =  $\frac{\sum Company\ Ownership\ (%) \times Direct\ Emissions\ (tCO_2e)}{Total\ Energy\ Generation\ (MWh)}$
- Renewables vs Fossil Ratio** =  $\frac{Renewable\ Energy\ Generation\ (MWh)}{Total\ Energy\ Generation\ (MWh)}$
- Coal Exposure (%)** =  $\frac{Coal\ Exposure\ (€M/MWh)}{Total\ Energy\ Generation\ (MWh)}$
- Relative Avoided Emissions** =  $\frac{Emissions\ Per\ €1M\ Bench\ (tCO_2e) - Emissions\ Per\ €1M\ Portf}{Company\ Revenue\ (€M)}$
- Absolute Avoided Emissions** =  $\sum Company\ Ownership\ (%) \times Scope\ 1 - 4\ Emiss - (Avoid\ €M)$
- Water Intensity** =  $\sum Weight\ (%) \times \frac{Company\ Water\ Usage\ (m^3) - Water\ Return}{Company\ Revenue\ (€M)}$
- Waste Intensity** =  $\sum Weight\ (%) \times \frac{Waste\ to\ Land\ fill\ (t) + Nuclear\ Waste\ (t) + Incinerator}{Company\ Revenue\ (€M)}$
- Recycling Intensity** =  $\sum Weight\ (%) \times \frac{Waste\ Recycled\ (t)}{Company\ Revenue\ (€M)}$
- Pollutant Intensity** =  $\sum Weight\ (%) \times \frac{Pollutant\ Damages\ (€M)}{Company\ Revenue\ (€M)}$

TERMS

- Weight:** Weight of each position as a proportion of assets under management
- Direct Emissions:** Company reported annual scope 1 & 2 emissions\*
- Company Revenue (€M):** Annual Revenue, last reported full year (unit: €1,000,000)\*\*
- Asset:** Assets Under Management (€)
- MWh:** Megawatt hours
- CO<sub>2</sub>e:** Tonnes of Carbon Dioxide and Equivalent greenhouse gases emitted per year
- €:** Euros

METHODOLOGICAL NOTES

- \* If a company does not report its environmental footprint, a proxy company will be used – of the same sub-industry.
- \*\* If a company is not revenue generating, the first forecasted year of revenue will be used.



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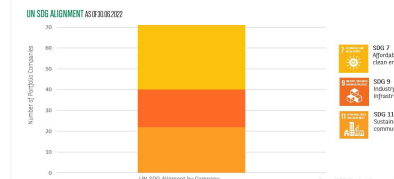
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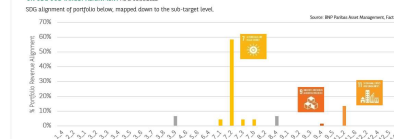
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SDGS

The UN SDGs are made of 17 goals containing 169 sub-targets which promote sustainable development. They were first popularized in 2015, the UN's 15th member states to achieve the goals by 2030. Scattered below is the alignment of the Energy Transition portfolio to the portfolio's selection on a bottom-up basis, informed by the sub-targets of each goal. Reflecting that not all SDGs are material, the Energy Transition portfolio provides a clear signal of the portfolio's key areas of impact. All holdings within the Energy Transition are at least 50% aligned with revenue, CO<sub>2</sub>e or CO<sub>2</sub>e intensity.



UN SDG Alignment by Company



UN SDG Sub-Target Alignment

Methodological note: This graph uses a different mapping methodology to the one above, covering all investable SDGs mapped to revenue or CO<sub>2</sub>e. Methodology adapted from the BNYMAM Sustainability Centre. Percentage alignment is not additive. One economic activity may align with multiple SDGs.

AREAS OF HIGHEST SDG ALIGNMENT

- Target 7.2:** By 2030, increase substantially the share of renewable energy in the global energy mix
- Target 7.3:** By 2030, double the global rate of investment in energy efficiency

Source: BNP Paribas Asset Management. Portfolio holdings are subject to change as they are rebalanced and should not be used for investment purposes. Data as of 30/06/2023.

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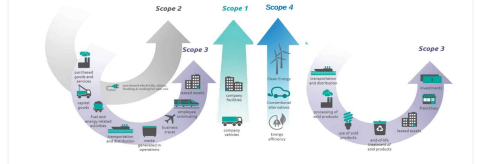
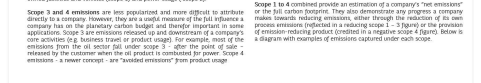
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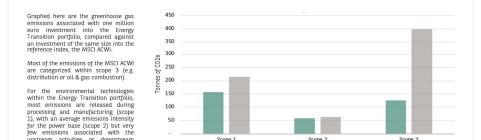
CARBON

SCOPE 1 & 2 EMISSIONS

Scope 1 and 2 emissions are most commonly used in carbon reporting. They are easily and directly attributable to a company, accounting for company-owned facilities and vehicles (scope 1) and power usage (scope 2). Scope 3 and 4 emissions are less apparent and more difficult to attribute directly to a company. However, they are a useful measure of the full footprint of a company's operations. Scope 3 emissions represent up and downstream of a company's core activities (e.g. business travel or product usage). For example, most of the emissions from the oil sector fall under scope 3 after the point of sale – emissions by the consumer when the oil product is combusted for power. Scope 4 emissions – a newer concept – are "avoided emissions" from product usage.



TCO<sub>2</sub>e EMISSIONS PER MILLION EUROS INVESTED BY SCOPE



Source: Data by company reports, BNEF, ICA, BNP Paribas Asset Management, Dec 2022

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CARBON

PORTFOLIO NET EMISSIONS

The primary measure of impact for the Energy Transition portfolio is carbonization. To quantify this, an estimation is required to determine whether the portfolio's overall greenhouse gas emissions that it emits, or in other words, producing decarbonization. Using the example of a solar manufacturer, the estimation takes the quantity of solar panels sold in the last reported year and plots the volume of panels distributed to each end market in a matrix. Based on the location of each end market, the solar capacity factor (or utilization rate) can be inferred which can then be used to estimate the total solar output of the panels in a given year.

Through the inclusion of "topor & avoided emissions" as a metric, companies or funds with emission lowering products can estimate and articulate avoided emissions, and net these against their carbon footprint to demonstrate their overall impact on the planetary carbon budget. The Energy Transition portfolio aims to illustrate a net negative carbon footprint through investing in technologies which avoid more emissions through their lifetime than they emit during their creation.

Methodology: This analysis estimates the scope 1, 2, 3 and 4 emissions of the top 10 positions in the Energy Transition portfolio (over half) of the portfolio by weight and compares this profile with the portfolio's carbonization. The resulting time energy units can be multiplied against the CO<sub>2</sub>e intensity of the asset class to provide a carbon avoidance figure, which can finally be multiplied by the portfolio's share of solar sales to provide the total scope 4 avoided emissions of a company. This is multiplied by the % of shares owned by the portfolio, summed alongside all other investments and scaled to a per €1 million figure.

Limitations: As a forward, the results of this exercise should be used for indicative purposes only. The limitations of the methodology and the raw data underpinning it are numerous and significant. The mapping of greenhouse gas emissions across a value chain remains a complex and non-standardized task. The resulting time energy units can be multiplied against the CO<sub>2</sub>e intensity of the asset class to provide a carbon avoidance figure, which can finally be multiplied by the portfolio's share of solar sales to provide the total scope 4 avoided emissions of a company. This is multiplied by the % of shares owned by the portfolio, summed alongside all other investments and scaled to a per €1 million figure.

NET CARBON EMISSIONS PER MILLION € INVESTED AS OF 30/06/2022



Source: Data by company reports, BNEF, ICA, BNP Paribas Asset Management, Dec 2022

On net, the Energy Transition portfolio is carbon negative, avoiding more CO<sub>2</sub>e (202e per million euros invested). The MSCI ACWI is net carbon positive, increased with the net release of 472 tonnes of CO<sub>2</sub>e per million euros invested.

BREAKDOWN OF CARBON EMISSIONS BY SCOPE AS OF 30/06/2022



Source: Data by company reports, BNEF, ICA, BNP Paribas Asset Management, Dec 2022

This chart breaks out the net emissions of the Energy Transition top 10 and MSCI ACWI portfolios by scope. Avoided emissions for Energy Transition increased this quarter over the previous due to an increase of ownership and exposure to energy renewable CO<sub>2</sub>e in the top 10 which are key facilitators of decarbonization. Scope 3 emissions for the MSCI ACWI increased this quarter over the previous due to an increased weight in oil and gas companies, following the power price rally.

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