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## CLIMATE CHANGE AND CAPITAL MARKETS



The views expressed in this report are the sole responsibility of the authors and do not necessarily reflect those of the sponsors, the ET Risk or SEI Metrics consortium members, nor those of the review committee members. The authors are solely responsible for any errors.

### WHY DO FINANCIAL INSTITUTIONS CARE?



### Three types of of assessments



### PRIMARY USERS & USE CASE



### **BETTER VALUATION**

3

Better pricing of ET risks (assuming baseline scenario)

#### LONG TERM INVESTORS

Improving long-term returns of Institutional investors (e.g. pension funds, Insurance companies)

### **'2D STRESS TEST'**

Resilience of portfolios and financial institutions to accelerated Energy Transition (2D stress test)

### 1 2D ALIGNMENT

Misalignment of investments and assets in the real economy with climate goals

### **PRUDENTIAL AUTHORITIES**

Anticipating the impact of climate action on financial stability and financial institutions

### **POLICY MAKERS / REGULATORS**

Monitoring progress on Paris agreement and potential build-up of financial risks / economic inefficiencies that may translate into risks for financial markets

### **CONNECTING 2 DIFFERENT WORLDS...**

ET Risk project report



Vs.

SEI metrics project report



### Working with partners



## **SEI METRICS PROJECT**

EUROPEAN UNION



nvesting agreement No 649982



### **TESTING 2D ALIGNMENT OF REAL ASSETS**





Power Plants (96,970)		Customized Display 📎 Advanced Data Export 🏷 Export To 🗷 🤮
		Go To Page Go Page 1 of 3879 Prev Next
Power Plant Name	Janschwalde Power Station	
Penzhin Tidal Power Plan	Power Plant Details	
Three Gorges	Power Plant Name	Janschwalde Power Station
Baihetan	Region	Europe
Kiluodu	Country	Germany
Myitsone Hydropower Pla	State or Province	Brandenburn
Belo Monte	City or Town	Deitz
	County or District	Pane Nobe
	County or District	PLANT DATA
	status	Gas-fred power plant Owner: Conedison
uen	Plant Type	Capacity: 750 MW
	Fuel Category	Planned retirement: 0 MW
	Primary Fuel	Operates since: 1953 CO2 estimates: 1.2 ton/war
	Capacity Category	
	Regulator	
	Total Capacity (MW)	
	Active Installed Capacity (MW)	
	Fuel Linkage	
	No. of Phases	
	Year Online	

### Asset level data:

- 97,000 power plants
- 22,000 Oil- and Gas fields
- 95 million produced cars •
- 36,000 Airplanes
- 10,000 Ships
  - 2,200 Cement factories
  - 13,000 Steel plants





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Bloomberg, S&P....



Portfolio X-Ra	Y						
Asset Allocation U.S. Equities 62.65%			Equity Style Large Core 33.21 <sup>%</sup>	7	30	31	🗇 Large
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North America	89.64	-	Yield %		1.56		1.85
Latin America	0.52		Price/Book Ratio		1.96		2.04
			Return on Assets (RDA)		5.96		8.12
			Return on Equity (ROE)	1	15.42		19.79
Not Classified	0.00		Phoj EPS Growth - 5 Yrs %		13.15		9.85
Sectors Croical		Ø	Sensitive	9			

### **Choice of scenarios**



#### **DATA ON PHYSICAL ASSETS**

### **Testing 2°C alignment for a sample portfolio**





### **Company capex and retirement targets**



Source: 2ii, IEA, GlobalData

Renewable capacity additions (2015-2020)



## **ET RISK PROJECT**

**ET RISK PROJECT** 



### WHAT IS IN THE TOOLBOX?



A



Design and Quality BEA of Sweden





















3

## TRANSITION RISK SCENARIOS

# TRANSITION & FINANCIAL DATA

## TRANSITION RISK MODELS



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## TRANSITION RISK SCENARIOS

# TRANSITION & FINANCIAL DATA

TRANSITION RISK MODELS



## MISTAKES TO AVOID...









### **Requirements for risk data**



## ...SCENARIOS...





## ...MODELS...





2°C ALIGNMENT & CAPITAL MISALLOCATION MODEL

SEI METRICS PROJECT





**CLIMATEXCELLENCE MODEL** 



RatingsDirec

Kepler Cheuvreux TRANSITION RESEARCH

VALUATION MODELS

S&P Global

**CREDIT RISK MODELS** 

ET RISK PROJECT

### Allocating macro impacts to micro actors



### Challenge of mapping risk impacts to companies



### Option 1: Extending the forecast period



### Option 2: Accelerate the risk



### Option 3: Increase the risk premium





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