



International Arbitration in the Era of Climate Change: Renewable Energies, Geoengineering and Critical Mineral Industry *

Summary

*** Please note that this summary of the panel was AI-generated and therefore has not been fully vetted for accuracy.**

The session at Washington Arbitration Week focused on the intersection of international arbitration, climate change, and the renewable energy sector. Moderated by Adara Brown, the panel featured experts including Dr. Jose Alberto, Ken Kratz, Misty Garrett Rush, and Peter Platt, who provided insights into the growing disputes arising from renewable energy investments and the critical minerals industry.

Panelists highlighted the significant rise in renewable energy investments, which reached a record \$303 billion in 2020, correlating with an increase in related disputes. Key factors driving these disputes include the vast scale of investments, evolving technologies, and government interventions. The discussion referenced the Spanish solar energy disputes as a case study, illustrating how changes in government incentives can lead to legal challenges.

The conversation shifted to the impact of energy transitions on critical minerals, emphasizing the heightened demand for materials like lithium and copper, essential for renewable technologies. The panel acknowledged that the extractive industries have historically been prone to disputes due to price volatility and regulatory risks, which are compounded by the complexities of developing countries' legal frameworks.

Looking toward the future, the panelists predicted an increase in disputes related to renewable energy and critical minerals, driven by ongoing political and economic uncertainties. They emphasized the importance of investment treaties and the potential for sophisticated legal strategies to navigate emerging risks.

Geoengineering was introduced as a topic of discussion, with the panel noting that while it is not yet widely implemented, it raises ethical and regulatory questions that could lead to disputes as countries explore large-scale climate intervention strategies. The session concluded with an acknowledgment of the need for careful consideration of investor expectations and government commitments in the evolving landscape of international arbitration related to climate change and renewable energy.



Authors

Dara Brown, Petr Polášek, José Alberro, Garret Rush, Kenneth Kratovil

Topics

International Arbitration, Climate Change, Renewable Energies, Geoengineering, Critical Mineral Industry, Mining

Category

WAW

Full Transcript

00:00:00

Ellis starting with know who

00:00:09

you aren't there. Lion King

00:01:00

and Thank you everyone for

00:01:06

being here and thank you

00:01:07

very much to widen case

00:01:09

and Peter. Thank you very

00:01:10

much for the support of

00:01:11

the firm Dara. Thank you

00:01:12

very much as well. It's

00:01:14



our fourth fourth day of

00:01:17

Washington arbitration week and we

00:01:20

have the pleasure of of

00:01:22

one being here. But also

00:01:24

talking about 11 key topic

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which are climate change and

00:01:30

the environment and basically I

00:01:34

would like to keep it

00:01:35

short for those that might

00:01:37

not know me, but my

00:01:38

name is Jose Antonio Rivas

00:01:39

and co-founder of Washington arbitration

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week together with you and

00:01:43



Laird and I would like

00:01:46
to introduce our moderator today

00:01:48
at Dara Brown. She is

00:01:50
an associate in one case

00:01:53
international arbitration group. And she

00:01:56
represents and advises private parties

00:01:58
in foreign Sovereign in in

00:02:00
the resolution of international dispute

00:02:02
or practice focuses on investment

00:02:04
treaty and Commercial arbitration as

00:02:06
well as public international law.

00:02:07
She has represented clients in

00:02:09
the albertine arbitration before various.

00:02:15



Parties in and tribunals under

00:02:18

the ICC rules under exit

00:02:20

and and all the rules.

00:02:21

She has also represented clients

00:02:24

in a variety of purple

00:02:25

mattress, and and she graduated

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with honors from Cornell Law

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School, or she served as

00:02:33

editor for both at Journal

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of public policy and the

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Supreme Court Burlington, Adara has

00:02:41

also worked on matters related

00:02:43

to the environment hands. She

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is now being a motivator

00:02:48

of this panel and the

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I will let you resent

00:02:52

our panel. Thank you. Thank

00:02:55

you so much. Let's try

00:02:58

this again. Welcome everyone to

00:03:00

fourth day of Washington arbitration.

00:03:02

We thank you for attending

00:03:05

our event today. We will

00:03:07

discuss International arbitration in the

00:03:09

era of climate change renewable

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energies geoengineering and the critical

00:03:13

mineral industry. So I'd like

00:03:15



to introduce our esteemed panelist

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first off with Dr. Jose,

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Alberto. Dr. Barrow the senior

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managing director at FTI Consulting.

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He has more than 40

00:03:25

years of experience focusing on

00:03:27

applied economic and financial modeling

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in numerous Industries, including oil

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and gas consumer goods and

00:03:33

Telecommunications specializes in Damages estimation

00:03:38

and international arbitration murders in

00:03:40

antitrust along with economic impact

00:03:42

analysis and tariff design and

00:03:44



water electricity and natural gas

00:03:46

Industries in ICC arbitrator as

00:03:50

well. Next I'd like to

00:03:52

introduce Ken Kratz, Cottleville. And

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cans right next to me

00:03:58

can the current partner at

00:04:00

H&K he has over 20

00:04:02

years of experience in valuation

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and forensic accounting. He specializes

00:04:05

in Damages called quantification valuation

00:04:08

and complex Financial modeling. He's

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been appointed as a testifying

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expert and assisted the named

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expert in more than 40

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arbitrations involving Renewables and Mining

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dispute with experience as a

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testifying expert he works for

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an investment Bank in New

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York and has held various

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corporate finance and Regulatory positions

00:04:28

at Lockheed Martin and the

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SEC. Next we have Misty

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raasch Garrett Rush. He is

00:04:36

the managing director at Secretariat.

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He's healthy as he's spent

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over the last two decades

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and by the clients and

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providing expertise on critical issues

00:04:46

involving valuation finance and economics.

00:04:50

His work has been Industries

00:04:52

including Financial Services Telecom Mining

00:04:54

and all aspects of Garrett

00:04:57

has been recognized by whose

00:04:59

whose legal as technically outstanding

00:05:01

and among the very very

00:05:02

best prior to joining Secretariat

00:05:04

Miss Rush works for a

00:05:06

managing management consulting firm focusing

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on developing Revenue enhancement strategies

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for private equity-backed companies. And

00:05:14
he was at the kid

00:05:14
in both France and the

00:05:15
United States. Lastly we have

00:05:20
had her plastic is a

00:05:23
partner at Wayne case. He

00:05:25
has more than 20 years

00:05:26
of experience as an international

00:05:28
law attorney who specializes in

00:05:30
investment treaty arbitration International commercial

00:05:33
arbitration public international law and

00:05:35
the protection of foreign investments.

00:05:37
He has experience working with

00:05:38



clients in a number of

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Industries, including mining and mineral

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processing electricity generation Supply and

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distribution telecommunications oil and gas

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real estate in sovereign debt

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and more throughout. The last

00:05:52

decade has been recognized by

00:05:55

various market research institutions such

00:05:58

as legal as a leader

00:06:00

in arbitration. He started off

00:06:02

his career and wine cases

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Prague office prior to joining

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its DC office in 2003,

00:06:06



and he has he was

00:06:08

educated in both the Czech

00:06:09

Republic United States. I just

00:06:12

want to provide a quick

00:06:13

roadmap for today's discussion will

00:06:15

cover three main topics with

00:06:17

a sub top. Let's say

00:06:18

so first we'll discuss the

00:06:20

rise and renewable energy Investments

00:06:22

and related disputes Maxwell turn

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to the future of Renewables.

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Well, then change topics in

00:06:27

energy transitions impact on critical

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minerals and base metals and

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will close out today's session

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with lessons. We can draw

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from geoengineering. Show me like

00:06:38

to start off with our

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first topic which is the

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rise and renewable energy investments

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in related dispute. And the

00:06:48

first question will go to

00:06:49

can but everyone off course

00:06:51

cannot Pine-Sol 10 and 2015

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for the first time in

00:06:56

history developing countries are poorly

00:06:58



Ambassador more renewable energy projects

00:07:00

in developed economies more over

00:07:02

in 2020 investments in renewable

00:07:04

energy projects and mount it

00:07:06

to record of 303 billion

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US Dollars, which is more

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than seven times the figure

00:07:11

in 2004 this significant growth

00:07:13

in renewable energy Investments has

00:07:15

an obvious correlation with the

00:07:16

rise in renewable energy disputes.

00:07:18

What are factors in your

00:07:20

opinion that are driving these

00:07:22



disputes. Thanks for the thanks

00:07:28

for the great introduction. And

00:07:30

thank you Dwayne case for

00:07:31

hosting us at this important

00:07:33

event on climate change. I

00:07:36

think a couple the main

00:07:37

factors that are driving some

00:07:39

of the increase in disputes

00:07:41

is the actual size and

00:07:43

the gross of the renewable

00:07:45

energy industry and I think

00:07:48

this is a very important

00:07:48

Lee time panel here because

00:07:51



as today is the kickoff

00:07:52

of the 28th cup meeting

00:07:55

in the UAE that they're

00:07:59

going to have 70,000 Representatives

00:08:02

over 200 countries talking about

00:08:04

climate issues and that's going

00:08:08

towards that growth factor or

00:08:10

just today and they were

00:08:11

talking about how the highest

00:08:14

record of climate is in

00:08:17

the u.s. In the night

00:08:18

or in the world in

00:08:19

2023 and currently were out

00:08:22



about 1.4 degrees Celsius. Of

00:08:24

the levels from pre-industrial time

00:08:26

and everybody knows I think

00:08:28

the goals from press cords

00:08:30

have been to keep it

00:08:31

around 1.5 to 2 by

00:08:33

the end of the century

00:08:34

some of the information that

00:08:37

came out showed that we're

00:08:39

not really on a track

00:08:40

towards that passed earlier estimated

00:08:43

about 2° to 2 1/2

00:08:46

degrees Celsius by the end

00:08:47



of the century and it's

00:08:49

a lot better than it

00:08:50

was estimated back in 2010,

00:08:52

which was at 3.5 degrees,

00:08:54

but it doesn't sound like

00:08:56

a lot when you're going

00:08:56

from 1.4 to 2.5. But

00:09:00

really you're talkin about an

00:09:01

80% increase so that increase

00:09:04

in the carbon emissions is

00:09:06

driving the growth towards the

00:09:08

actual increase in the number

00:09:09

of renewable projects that are

00:09:11



need it, but it's not

00:09:14

enough currently. The the plans

00:09:18

that the cop has our

00:09:21

to Bill climber resistance IDs,

00:09:23

which we know that time

00:09:25

too. Actually already occurring. So

00:09:26

we need to build communities

00:09:28

that are ready for those

00:09:29

situations. We need to move

00:09:32

off of fossil fuels some

00:09:34

predict by 2050 to actually

00:09:36

read some of our Net

00:09:37

Zero goals so that we're

00:09:39



not at levels that aren't

00:09:43

in line with our estimates,

00:09:45

but the main area which

00:09:47

is been for that size

00:09:48

as the investment and the

00:09:49

company is talking about that.

00:09:52

We need to inspire commitments

00:09:53

into investments into environmental and

00:09:56

positive projects and practices. So

00:09:59

as you mentioned know that

00:10:00

the size of the growth

00:10:01

is now at three hundred

00:10:03

billion dollars in renewable energy

00:10:04



projects of which is massive

00:10:07

amounts of higher than it

00:10:08

was in the 10 years

00:10:10

prior to 2020. So 2010

00:10:13

to 2019 hit and moderated

00:10:16

around 200. A billion and

00:10:19

before that in the early

00:10:20

2000s, it was significantly lower

00:10:22

at around 50 billion or

00:10:24

less. So there was a

00:10:25

huge growth in the early

00:10:26

2000s Plateau around 2010 to

00:10:29

2020 Malvern another growth space.

00:10:31



Basically where that increased from

00:10:34

2020 of 300 billion is

00:10:37

now at 500 billion half

00:10:39

a trillion dollars. But is

00:10:41

that enough? Is that what

00:10:42

we're talking about us being

00:10:43

enough experts would say no

00:10:47

currently the plan that we

00:10:49

have in place our to

00:10:51

reduce carbon emissions by about

00:10:53

18 of the amount that

00:10:55

we need to reduce by

00:10:56

20 30 in Some estimates

00:10:59



say that actually reach the

00:11:01

levels that we would need

00:11:02

to we would actually have

00:11:05

to double or even triple

00:11:07

the level of investment. So

00:11:09

we're talking about a massive

00:11:10

amount of investment in a

00:11:13

relatively short a time. So

00:11:15

that increase in the size

00:11:17

in the increase in the

00:11:20

time. When it actually need

00:11:22

to occur as I was

00:11:23

getting kind of issues that

00:11:24



will end up leading towards

00:11:26

potential additional disputes the funding

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Gap as well right now

00:11:31

on just the plants not

00:11:33

to actually do any type

00:11:35

of abatement but I see

00:11:36

the planes that are already

00:11:37

in place and took meet

00:11:39

our current plans is actually

00:11:41

250 billion underfunded every year.

00:11:43

So there's a lot of

00:11:45

investment that's going to be

00:11:47

coming that needs to be

00:11:48



coming. I think that that

00:11:50
in itself is led to

00:11:53
a lot of disputes and

00:11:54
will continue to lead to

00:11:55
a number of disputes into

00:11:56
the future. Okay. Thank you

00:11:59
so much Ken. Would you

00:12:02
like to add anything? I

00:12:06
knew that Ken would be

00:12:07
dressing discussion. Reading the Wall

00:12:11
Street Journal earlier this week

00:12:13
in this is chart was

00:12:14
in there and I couldn't

00:12:15



help but included it was

00:12:16

in a feel-good story about

00:12:18

how much investment is going

00:12:21

into sold a higher than

00:12:24

it had been originally expected

00:12:25

wind power and Global stock

00:12:29

of battery electric vehicles might

00:12:32

be hard for you to

00:12:33

see but there's three things

00:12:35

I took from these graphs.

00:12:36

What is the darker line

00:12:39

is the actual investment in

00:12:41

capacity and then you can

00:12:44



see that that extends with

00:12:46

the 2023 forecast in its

00:12:47

it's quite vertical and accelerating

00:12:50

but then you can see

00:12:52

really kind of the point

00:12:53

of these charts was from

00:12:56

2000 to 2010 and intervening

00:13:00

years. There have been a

00:13:01

number of projections and all

00:13:03

of those have been under

00:13:04

projected. So there has been

00:13:06

actually a higher than expect.

00:13:10

Investment in solar wind power

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capacity and vehicle batteries. And

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the reason for this really

00:13:19

is because at the time

00:13:21

in 2009 that we did

00:13:23

not expect the cost of

00:13:25

solar to go down so

00:13:26

much. And right now it's

00:13:28

about 10% of what it

00:13:30

was in 2009 which makes

00:13:33

solar actually the most economic

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along with wind power of

00:13:37

any of the of any

00:13:40

of the sources of power

00:13:41



well below on some of

00:13:43

the traditional fossil fuels and

00:13:46

really the story here, but

00:13:48

kind of taking that over

00:13:49

to the disputes world we

00:13:53

think about what what what

00:13:53

creates a fertile environment for

00:13:56

disputes and the first Factor

00:13:59

wrist size of investment, right?

00:14:00

So we have the size

00:14:02

of investment massive investment. We

00:14:04

have massive expected investment needed.

00:14:06

We also changing technology. So

00:14:09



course that creates Lots of

00:14:11

friction and then we have

00:14:14

government intervention government involvement. So

00:14:17

the perfect recipe for international

00:14:20

arbitration. Just looking back at

00:14:23

what can I mean from

00:14:24

the last few years and

00:14:27

this. Leading up to 2023

00:14:30

and really kind of one-story

00:14:36

in my mind, which is

00:14:37

the Spanish solar story. Right?

00:14:40

So you see on the

00:14:42

left you can see the

00:14:42



number of renewable energy awards

00:14:45

that come out. It's dominated

00:14:47

by solar on the right

00:14:49

as you can see most

00:14:50

of those are coming from

00:14:51

West and East Europe and

00:14:54

of those most of those

00:14:55

are coming from Spain. So

00:14:58

why your what created the

00:15:00

Spain disputes? Well, it was

00:15:02

because the cost of store

00:15:04

with so high it's beIN

00:15:06

offered attractive incentives to draw

00:15:08



investors in Does incentives included

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according to the investors the

00:15:14

promise of six terrorists according

00:15:16

to Spain it was the

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promise of a reasonable rate

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of return all of these

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disputes have kind of had

00:15:22

a few different debates on

00:15:25

the quantum side, but the

00:15:27

really the big debate that

00:15:29

has differentiated the awards is

00:15:31

whether the tribunal has gone

00:15:32

with a reasonable return approach

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was Gone with a fixed

00:15:36

tariff protection. It's almost 50/50.

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It's raining a little bit

00:15:40

towards the fixed tariff right

00:15:42

now. I'm just still a

00:15:43

few Awards left to come

00:15:45

out but that is the

00:15:47

end of the debate and

00:15:49

then the resolution looking backwards,

00:15:52

but you're not going to

00:15:53

see that same debate going

00:15:54

for a ride because there

00:15:56

is no need for a

00:15:57



fixed are going for the

00:15:59

incentives going forward or at

00:16:01

least the same incentives that

00:16:02

we saw on past. Thank

00:16:06

you. Great. Thank you so

00:16:07

much Gareth Jose. Do you

00:16:10

have anything to add? couple

00:16:15

couple points one that the

00:16:20

amount of subsidies that governments

00:16:24

have been giving industrial G

00:16:26

Grow Up by fast starting

00:16:29

in 2015, but they have

00:16:32

started to to grow slower

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and to take her off

00:16:35

one of the reasons probably

00:16:38

know each other country subjected

00:16:42

to its own political Cycles,

00:16:45

but certainly the increase in

00:16:48

the price of other forms

00:16:50

of energy and particularly of

00:16:53

the gas or the fact

00:16:55

that natural gas has been

00:16:57

going up very fast because

00:16:59

of the war in Ukraine

00:17:01

must be one of them

00:17:05

is said that he disengagement

00:17:10



of governments that's one point

00:17:14

and and the other point

00:17:16

which will probably talk a

00:17:17

little more forward is that

00:17:20

is agreed that the Spanish

00:17:26

lesson start for everyone involved.

00:17:30

This should be very careful

00:17:31

as to what the government

00:17:35

promises to investors but the

00:17:39

increasing investment in in the

00:17:45

electricity or creating a network

00:17:49

effects that because of the

00:17:51

fact that the electricity as

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we all know generation of

00:17:56

consumption is highly dependent on

00:17:58

the form the specific form

00:18:02

of the grade of the

00:18:03

network these new sources generation

00:18:08

that are spending around or

00:18:10

changing the dynamic of to

00:18:12

the Of the greed and

00:18:15

daddy's bringing a new generation

00:18:18

of of claims that are

00:18:20

indirectly connected to the sub.

00:18:29

Great. Thank you so much.

00:18:30

Jose. Apetor. Did you have

00:18:32



any final words on this

00:18:33

question a couple of things

00:18:35

so there has been less.

00:18:43

We know a lot of

00:18:44

great number of Cases really

00:18:47

think to renewable energy sources

00:18:48

before Investments with the tribunals

00:18:51

specifically according to the energy

00:18:55

charge of Secretariat, which published

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its statistics this may out

00:19:00

of the 158 known cases

00:19:04

under the energy Charlotte with

00:19:05

a 59% related to power

00:19:08



a Renewable Power Generation that

00:19:11

comes to about 93.3 Jason

00:19:15

something like that. It's not

00:19:16

around found about almost a

00:19:18

hundred cases. Which also publishes

00:19:21

its investment with the arbitration

00:19:24

identified about 1,250. Places to

00:19:29

eat and at least 8%

00:19:33

according to youngest out of

00:19:34

these related to the reduction

00:19:39

of clean energy Investments a

00:19:40

very significant number. So I'm

00:19:44

going back to the question

00:19:45



of what is the driver

00:19:46

of these cases in short.

00:19:49

It is a reduction to

00:19:53

incentives that states have provided

00:19:56

to producers of solar electricity

00:20:00

in particular or to produce

00:20:03

a list of renewable energy

00:20:04

source, and let me just

00:20:06

outline the developments in EU

00:20:09

countries such as Spain and

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Italy straight the European Union

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issued a writ of the

00:20:18

directors in 2020 and 2009

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setting for the renewable energy

00:20:24

targets for its member states

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in terms of how much

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and they're training. To be

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produced and consumed out of

00:20:31

renewable sources elected to the

00:20:34

individual member states to implement

00:20:36

how to achieve those targets

00:20:39

and so some countries such

00:20:40

as Italy and Spain adopted

00:20:43

breaking the peace and sent

00:20:46

this to produce results of

00:20:47

solar power. For example in

00:20:49



the formal about market price

00:20:52

with the goal of stimulating

00:20:58

private investment in that area

00:21:00

and the and the building

00:21:01

out of the Renewable Power

00:21:03

sector after that after those

00:21:08

rare humans were put in

00:21:10

place the prices of the

00:21:12

technology drop significant playing this

00:21:14

was in the early 2010,

00:21:16

and that was because technologically

00:21:21

became cheaper to manufacture solar

00:21:22

panels for example in China

00:21:24



and suddenly became too much

00:21:26

cheaper to install. Install these

00:21:29

power plants that it was

00:21:31

at the time when these

00:21:31

regulatory regimes were adopted and

00:21:34

so this created a gap

00:21:36

where there was a lot

00:21:37

of influx of investment into

00:21:38

these are our plans as

00:21:40

investors are seeking to capitalise

00:21:42

on the difference between the

00:21:43

subsidised prices subsidize their menus

00:21:47

and the costs that they

00:21:48



were in krink in real

00:21:49

life. That was one of

00:21:52

the other point was that

00:21:54

many countries found themselves in

00:21:56

a situation where the government's

00:21:59

perceived the regime as being

00:22:02

just too expensive either because

00:22:04

money was running out in

00:22:06

terms of funding these subsidized

00:22:08

prizes or or because politically

00:22:11

it was difficult to be

00:22:12

transferring all the extra charge

00:22:14

to end consumers who ultimately

00:22:16



have to pay I'm so

00:22:19

basically these reviews for a

00:22:20

rolled back the investors who

00:22:23

spent the money when the

00:22:26

original incentive for him swearing

00:22:28

Place felt that this was

00:22:30

unfair to them and started

00:22:32

in less than three the

00:22:33

cases where they have been

00:22:34

less than three different sections.

00:22:35

And that's why we see

00:22:36

this man a arbitrations relating

00:22:40

to the solar sector in

00:22:42



particular. I would say just

00:22:46

in terms of the truce

00:22:47

burden of The Decemberists from

00:22:48

from these cases of the

00:22:53

words focus on the interaction

00:22:55

of investor expectations and the

00:22:59

state's right to to regulate

00:23:00

as we know and the

00:23:03

outcomes are not consistent from

00:23:05

this case even sometimes with

00:23:07

respect to the same country.

00:23:09

I will say though that

00:23:10

one common theme is that

00:23:12



the tribunals first focus on

00:23:15

what exactly are the rights

00:23:17

that The investor hat Under

00:23:19

the domestic relation that was

00:23:20

in place. That's really like

00:23:22

a key element and I

00:23:24

would caution. If you are

00:23:25

reviewing these cases to always

00:23:26

keep that in mind. These

00:23:28

decisions are driven in large

00:23:30

part by the by the

00:23:31

specifics of the particular incentive

00:23:34

for a change that's where

00:23:35



he placed under the national

00:23:36

loss and as much as

00:23:39

anything else in particular going

00:23:43

back to go to Derek's

00:23:44

had the strength of the

00:23:45

tribunal school focus on whether

00:23:47

the universe or sweater guaranteed

00:23:49

a certain price for a

00:23:51

certain duration irrespective of what

00:23:54

if that's the case then

00:23:56

it would imply that the

00:23:57

industry's entitled to keep the

00:23:59

downtown no matter how low

00:24:00



the cost or whether the

00:24:03

Russians were designed to only

00:24:05

provide to the investor services

00:24:07

will be returned as measured

00:24:09

for example by and hypothetical

00:24:12

efficient plant or an efficient

00:24:14

cost basis that sucks and

00:24:17

and you will see This

00:24:18

is an important factor that

00:24:22

drives a lot of the

00:24:24

Divergent outcomes. And the other

00:24:29

common element in these cases

00:24:31

is that once the tribunal

00:24:34



decides what the original looks

00:24:36

like when it comes to

00:24:39

the investors done in terms

00:24:41

of liability the tribunals focus

00:24:43

on how severe or what

00:24:45

is the magnitude of the

00:24:46

changes that that follow through

00:24:49

on either with respect to

00:24:52

what the original wish you

00:24:54

look like or with respect

00:24:55

to the impacts on the

00:24:56

on on the investors. Thank

00:25:02

you so much better. You've

00:25:04



all just describe the factors

00:25:05

driving The Surge the recent

00:25:08

surge in renewable energy Investments

00:25:10

and related disputes. Can you

00:25:12

briefly opine on where you

00:25:14

see things going in the

00:25:15

future and we'll start off

00:25:17

again with you can okay.

00:25:22

Thank you. I guess I'm

00:25:24

going to break it down

00:25:25

into. Two parts because I

00:25:28

think the rest of it

00:25:29

will be covered by the

00:25:29



rest of my life, but

00:25:30

you got the short-term future

00:25:32

and you got the long-term

00:25:33

future. So I'll take a

00:25:33

look at what the short-term

00:25:34

future potentially could look like.

00:25:36

Yeah. I'll just start by

00:25:38

talking about what's happening recently

00:25:40

and I've been talking about

00:25:41

a lot of the gross

00:25:42

lot of people have been

00:25:43

talking about what's needed. We

00:25:45

know it's needed but there's

00:25:46



been a little bit of

00:25:47

a changing landscape particularly recently

00:25:49

and 2023. Anybody follows Marcus

00:25:53

knows that renewable energies by

00:25:56

market cap have taken some

00:25:58

of the biggest beatings that

00:25:59

they've had in the last

00:26:00

decade the company's yelled at

00:26:04

are out there that are

00:26:06

published aren't either making as

00:26:09

much or it's being a

00:26:10

harder environment and people can

00:26:11

say that it's two different

00:26:13



things. Obviously. The rise in

00:26:15

inflation has caused problems for

00:26:18

many different companies many different

00:26:21

Industries and renewable energies is

00:26:23

obviously one of those Industries

00:26:24

that's taking a big hit.

00:26:26

If these companies that are

00:26:29

going into these long-term projects

00:26:31

are set up where you

00:26:32

live got two different sides

00:26:35

of the equation where maybe

00:26:36

their revenue side is is

00:26:38

may be an extreme that

00:26:39



were talking about some situations,

00:26:40

but then they really thought

00:26:41

about the cost side of

00:26:42

things with the inflation actually

00:26:44

hitting them. The margins are

00:26:46

getting squeezed and I'm not

00:26:47

able to actually continue to

00:26:48

make profit or continued operating

00:26:50

some situations and that's a

00:26:52

real problem for some of

00:26:53

the investors and it's causing

00:26:54

a lot of concern in

00:26:55

the environment. The same thing

00:26:58



you do is set around

00:26:59

interest rates 0 interest rates

00:27:01

have been increasing as inflation

00:27:03

has been increasing as well.

00:27:04

And we've heard the Mantra

00:27:06

that interest rates are going

00:27:07

to be staying higher for

00:27:08

longer. So if you entered

00:27:09

into a long-term contract as

00:27:11

an investor where you didn't

00:27:13

set up your financing to

00:27:16

actually be recuperated by your

00:27:18

operations for whatever reason or

00:27:20



if you had it for

00:27:21

a longer duration than the

00:27:23

term of the project or

00:27:25

shorter duration you Do you

00:27:27

have to be refinancing right

00:27:28

now? So those extra cost

00:27:30

of having to refinance at

00:27:31

rates that are much much

00:27:32

higher for projects that cost

00:27:34

potentially a lot more than

00:27:36

was expected also against wheezing

00:27:38

some of those margins. So

00:27:39

there's a lot of situations

00:27:41



that are causing turmoil in

00:27:43

the market. The investors are

00:27:45

concerned about the longevity of

00:27:48

some of their Investments at

00:27:49

the varsity made and they're

00:27:52

not sure how long the

00:27:53

situations are currently going to

00:27:54

last how long the inflation

00:27:55

is going to be this

00:27:56

High how long the interest

00:27:58

rates are going to have

00:27:59

to be this high and

00:28:00

if that's going to change

00:28:01



in a term in the

00:28:03

short-term, that's God's going to

00:28:05

turn things around you can

00:28:06

see by the stock market

00:28:06

it has it and to

00:28:08

be fair. These stocks had

00:28:10

really high rallies from the

00:28:13

two thousands until baby 2022.

00:28:17

So there's been a bit

00:28:18

of a pullback some people

00:28:20

ask me about 30% 40

00:28:22

% from where they were

00:28:23

a lot of stocks that

00:28:24



are High Flyers had come

00:28:26

back but Those additional costs

00:28:28

are something that is going

00:28:29

to potentially drive to speak

00:28:31

because investors are not in

00:28:34

situations, where are unprofitable situations

00:28:37

and they're trying to figure

00:28:38

out a way to get

00:28:38

out of something with all

00:28:42

the government and we were

00:28:43

talking about some people will

00:28:44

talk about a little bit

00:28:45

more all the government incentives

00:28:47



as well companies are getting

00:28:49

billions and billions of dollars

00:28:50

in tax incentives tariff reductions

00:28:53

and the renewable energy sector

00:28:55

is still struggling with a

00:28:57

situation. So how long can

00:28:58

those benefits continue the last

00:29:00

both of the customers and

00:29:02

two companies a lot of

00:29:05

the terrorists and the benefits

00:29:08

of going to the electrical

00:29:09

vehicle market now for government

00:29:12

One China has just been

00:29:13



renewed until 2025 soap as

00:29:15

a 72 billion dollar investment

00:29:17

right there. How long can

00:29:19

they be sustained? That's another

00:29:21

area of turmoil that's going

00:29:23

to probably cause no additional

00:29:25

disputes, but overall a In

00:29:26

the short-term the amount of

00:29:29

risk and the risk appetite

00:29:31

of people is going to

00:29:32

get questioned if it hasn't

00:29:35

already been on so some

00:29:37

of the investments in short-term

00:29:38



are likely going to be

00:29:40

harder to actually come by

00:29:42

because people are going to

00:29:43

be a little more risk-adverse

00:29:44

and that's not necessarily a

00:29:47

sign that there's going to

00:29:50

be less. It's because again

00:29:52

in European the situation we

00:29:53

have a concession and you're

00:29:54

actually supposed to perform on

00:29:55

something by certain kind of

00:29:56

time putting a certain amount

00:29:57

of investment actually produce and

00:30:00



you can't do it now

00:30:01

because you don't have the

00:30:02

finances are you can't afford

00:30:03

to make a profit. So

00:30:04

you hold off for two

00:30:06

or three or four years.

00:30:07

Are you going to actually

00:30:08

be allowed to keep that

00:30:09

again legal issues that will

00:30:10

definitely be considered again feeding

00:30:13

more potential dispute. Great. Thanks

00:30:16

so much, Jose. All these

00:30:21

things to you. Where do

00:30:22



you see things going in

00:30:23

the future? I agree with

00:30:28

whiskey. that There's going to

00:30:34

be an increasing number of

00:30:35

disputes. They will because the

00:30:43

drivers as as he said

00:30:47

this is the continues to

00:30:50

be a very we ski

00:30:52

area. There's other parts of

00:30:55

the risk involved in activities

00:30:58

that hasn't been fully exhibited

00:31:00

the relationship between investors and

00:31:07

government is not totally settled

00:31:10



and I think that to

00:31:14

come back to my previous

00:31:17

comment and then expand on

00:31:18

that. We are going to

00:31:22

start seeing what I would

00:31:24

call kind of indirect effects

00:31:26

of using zesty investments in

00:31:28

renewable is not the ones

00:31:30

that are directly connected with

00:31:34

The establishment of plants is

00:31:37

a solar or wind as

00:31:39

I have to do for

00:31:40

example, the behavior of the

00:31:43



network in the understanding that

00:31:46

the wizard Network Behavior may

00:31:49

have a very important impact

00:31:51

on the profitability of the

00:31:54

investor, but there's so many

00:31:59

countries are in Latin America

00:32:01

and in other parts of

00:32:04

the world. Government still own

00:32:09

either the only generating company

00:32:14

in the country or at

00:32:16

least have an incumbent and

00:32:18

that the issues that have

00:32:21

to do with the dispatching

00:32:23



of howling electricity citing to

00:32:27

the network Mexico to be

00:32:32

diplomatic experimenting with that by

00:32:35

changing all the rules. It

00:32:38

had established some years ago

00:32:40

as to how the electricity

00:32:41

is dispatched and given the

00:32:47

clear difference between generating electricity

00:32:49

party. Some periods of the

00:32:52

year of the of the

00:32:53

day with the wind and

00:32:56

solar or generating it with

00:32:58

hydrocarbons. The profitability of incumbents

00:33:04



company is a function of

00:33:07

The dispatching rules. So there's

00:33:10

an attack on dispatching room.

00:33:12

This is the type of

00:33:15

kind of indirect effects are

00:33:16

what I was talking about.

00:33:17

And I want thing that

00:33:20

I find extremely interesting is

00:33:21

that He should remain as

00:33:26

to how do you measure

00:33:28

the the Democrats or the

00:33:31

alleged Damage Done to the

00:33:33

investor whether it is with

00:33:35



more, I would call them

00:33:37

traditional DCF message or as

00:33:41

well as mentioned before considerations

00:33:44

about the profitability of the

00:33:47

investment. For example with the

00:33:49

calculations of the irr in

00:33:51

comparison to with some benchmarks.

00:33:54

So I think we're going

00:33:57

to see a lot more

00:33:58

cases probably different from the

00:34:02

ones that we've seen in

00:34:03

Spain and they will bring

00:34:06

to the for discussions about

00:34:09



some parameters. That have been

00:34:13

hidden in most of our

00:34:14

discussions about vibration. Great. Thank

00:34:19

you so much Jose. I'm

00:34:21

Garrett. What can we expect

00:34:22

in the next decade in

00:34:24

terms of Renewables by Tommy?

00:34:31

I think it if you

00:34:33

think about your what are

00:34:34

legitimate expectations right now and

00:34:38

we expect continued solar we

00:34:41

expect continued wind. What does

00:34:43

that do to the profile

00:34:45



of generating capacity? Well and

00:34:48

increasing percentage is going to

00:34:49

Renewables and what's unique about

00:34:51

Renewables. Is there a little

00:34:54

more unpredictable than the hydrocarbon

00:34:55

resources, right? So Jose is

00:35:04

in electricity grids right across

00:35:07

the bridge that can accommodate

00:35:08

and reach all of these

00:35:10

different plants. The other area

00:35:14

that is consistent with this

00:35:16

new profile of our energy

00:35:18

source is energy storage, right?

00:35:20



We talked a lot about

00:35:21

energy storage. I think we're

00:35:23

getting close to a large-scale

00:35:25

energy storage for electricity grids

00:35:29

the last piece that has

00:35:31

to take place and I'm

00:35:32

sure this is going to

00:35:33

come out of cop 28

00:35:35

and it's going to create

00:35:36

lots of issues in the

00:35:37

next couple decades is carbon

00:35:39

capture the people talk a

00:35:41

lot about carbon capture, but

00:35:43



there hasn't been a lot

00:35:44
of a lot of initiative

00:35:46
around it both in taxing

00:35:49
it and then I'll sell

00:35:50
the technology to implement the

00:35:52
incentives on a global scale

00:35:54
do not exist yet. And

00:35:56
at the same time we

00:35:57
need to implement carbon capture

00:35:59
to reach the goals that

00:36:01
they should be the world

00:36:03
has to reduce carbon emissions.

00:36:08
Thank you so much get

00:36:09



better the couple of quick

00:36:13

points. So the renewable energy

00:36:16

industry and Renewable Power production

00:36:20

in particular. I think has

00:36:23

some system of features that

00:36:24

just make it particularly susceptible

00:36:27

to political risk and conducive

00:36:30

to and less than 32

00:36:31

disputes. That's because there is

00:36:33

a large outlay of capital

00:36:35

at the beginning of those

00:36:37

Portraits Innovation. They rely on

00:36:41

government incentives and or they

00:36:44



rely on regulatory regimes that

00:36:47

the government put in place

00:36:48

and the lifespan of these

00:36:50

projects far far out lives

00:36:54

of the duration of her

00:36:55

over any particular government. So

00:36:58

these factors are not going

00:37:01

to go away they will

00:37:03

always be there. I think

00:37:05

the investor will be always

00:37:06

facing these issues. And what

00:37:09

that will mean also in

00:37:10

light of the jurisprudence of

00:37:12



this emerging underinvestment 3DS with

00:37:14
something very sizable Awards in

00:37:16
favor of investors is that

00:37:18
investors will continue to seek

00:37:20
the protection of investment treaties

00:37:22
and try to structure themselves

00:37:23
in a way that will

00:37:25
bring them Perfection under those

00:37:27
treaties and I think it

00:37:30
will be interesting to see

00:37:31
how that they were in

00:37:32
the future because there has

00:37:34
been a lot of pushback

00:37:36



against investment treaties recently a

00:37:38

number of states have renegotiated

00:37:41

them or terminate them did

00:37:43

the European in there is

00:37:45

a space them out or

00:37:49

so the European commission things

00:37:51

within the European Union. And

00:37:54

so I think we will

00:37:55

see a lot of maybe

00:37:57

more sophisticated investment 3 to

00:38:00

start drink by Future investors

00:38:02

seeking right away through the

00:38:04

remaining three pieces are still

00:38:06



out there to get some

00:38:07

meaning Perfections another point I

00:38:11

wanted to mention is if

00:38:14

investment three days are in

00:38:18

a terminated and disappear at

00:38:22

some point in the future.

00:38:23

I will not be at

00:38:26

the end of a quasi

00:38:29

investor-state arbitration dispute resolution because

00:38:34

what will happen is that

00:38:35

we might Reverb revert back

00:38:37

to the situation that existed

00:38:39

before investment treaties when the

00:38:42



more powerful investors when the

00:38:44

stink in developing countries in

00:38:46

particular are able to get

00:38:49

an investment contract with the

00:38:50

government that has an arbitration

00:38:51

clause and all that is

00:38:56

not the law of the

00:38:57

host state. So I think

00:39:01

some form of investor State

00:39:03

resolution in this area is

00:39:05

here to stay question I

00:39:07

think is Whether the smaller

00:39:09

investors who do not have

00:39:11



the power to negotiate a

00:39:12
special deal with the government

00:39:16
will be left out of

00:39:17
this if investment treaties are

00:39:19
not there. Thank you so

00:39:22
much better. I'm moving on

00:39:24
to our next topic critical

00:39:26
minerals and base Metal Products

00:39:27
disputes. I'll start off with

00:39:29
you Garrett. The energy transition

00:39:32
has also come in a

00:39:33
significant cost and the direct

00:39:35
impacts are manifesting within the

00:39:36



global supply of critical minerals.

00:39:38

What are some key takeaways

00:39:39

with respect and the energy

00:39:42

transition impact on critical minerals

00:39:44

and base metals. Extractive Industries

00:39:50

have always made up a

00:39:51

big part of the cases

00:39:52

in the case in the

00:39:54

exit caseload. So I think

00:39:56

most recently it's been about

00:39:57

25% I think that's consistent

00:40:00

with the past Trends you

00:40:03

can see here. This is

00:40:06



a graph of the demand

00:40:10

for materials. And so they

00:40:12

include new Plastics and building

00:40:15

materials and materials and metals

00:40:17

in this. Mrs. McKenzie DeGraff.

00:40:19

You can see there's a

00:40:21

picture of a couple lesson

00:40:22

1 there's been a significant

00:40:25

increase over the two 2020-22.

00:40:30

It's also quite volatile, right?

00:40:32

These are nominal I use

00:40:34

nominal prices in the so

00:40:35

you can see the effect

00:40:37



of price swings as shown

00:40:39

in these in his chart.

00:40:40

So it's swings quite a

00:40:43

bit. I think it We

00:40:47

think of Renewables as creating

00:40:49

a dematerialize world one fact

00:40:51

this transition has increased the

00:40:54

use of materials and necessarily

00:40:56

so write in order to

00:40:57

create the structures. We need

00:41:00

for renewable energy. We actually

00:41:03

need to expand and use

00:41:05

more more materials and that's

00:41:07



part of what this charge

00:41:09

is. And then you know,

00:41:13

I think we were familiar

00:41:14

with things like lithium and

00:41:18

Cheerios like lithium are in

00:41:20

the headlines every day with

00:41:22

the just massive increase in

00:41:23

demand. It's both necessary and

00:41:26

then there's always concerns that

00:41:27

the supply won't be enough

00:41:30

right and you can see

00:41:30

lithium shows up in the

00:41:32

far left of this graph

00:41:33



where the light blue shirt

00:41:35

is the portion of the

00:41:36

demand related to renewable energy

00:41:39

inside with lithium Czarface it

00:41:42

in the top of that

00:41:43

chart even though it's on

00:41:44

the far left, but I

00:41:45

think it's also interesting about

00:41:46

the things you like copper

00:41:49

and aluminum have a significant

00:41:52

portion of demand that's coming

00:41:54

from the renewable sector. And

00:41:56

so when we go back

00:41:57



to International arbitration, we think

00:42:00

well 25% of arbitrations related

00:42:05

to extracted but this is

00:42:07

a whole new sources of

00:42:08

disputes write these are This

00:42:11

is new Supply coming online.

00:42:13

And it adds to what

00:42:16

I consider kind of the

00:42:17

historic basis for for disputes

00:42:22

right in a in the

00:42:25

extractive industry things like commodity

00:42:28

price volatility write the prices

00:42:31

of your metals like gold

00:42:33



and copper have always sworn

00:42:36

quite dramatically. I was just

00:42:37

looking at it before this

00:42:39

and just thinking about how

00:42:42

Our industry are lawyers and

00:42:44

Consultants would act if you

00:42:48

know our prices are fees

00:42:50

Swan as much as some

00:42:52

of these Commodities, right so

00:42:53

copper was just over \$2

00:42:56

in 2020 and then it

00:42:58

more than doubled by 2021

00:43:00

and then it was down

00:43:01



25% in 2022 and then

00:43:04

up 30% in 2023 when

00:43:06

you can imagine what that

00:43:07

does to to an industry.

00:43:10

Think about what that would

00:43:11

do to our own work,

00:43:13

right? It creates a lot

00:43:14

of instability and a lot

00:43:16

of Behavioral Distortion that's part

00:43:19

of why I received a

00:43:20

lot of disputes coming out

00:43:22

of extractors. Regulatory risk and

00:43:24

government interventions have always been

00:43:26



part of the extractive industries

00:43:28

a typical mine takes about

00:43:30

10 to 15 years to

00:43:31

develop that's a long period

00:43:33

of exposure to potentially multiple

00:43:36

different political parties are regimes

00:43:38

in countries and in so

00:43:41

there's a lot of a

00:43:42

lot of exposure to risk

00:43:44

of that. Environmental and social

00:43:47

considerations. I personally haven't been

00:43:49

involved in a case yet

00:43:50

where there hasn't been some

00:43:52



environmental or social considerations as

00:43:55

part of the case in

00:43:57

the end the dispute and

00:43:58

of course risk and capital.

00:43:59

These projects are the poster

00:44:05

child for wrist, right? They

00:44:08

have the price volatility. I

00:44:10

talked about but significant upfront

00:44:11

Capital expenditures and a very

00:44:13

long life in order to

00:44:15

recover that a capital expenditure.

00:44:16

So the profile makes them

00:44:19

almost perfect for international disputes.

00:44:24



Thank you so much cat

00:44:25

and how would you describe

00:44:27

some key takeaways with respect

00:44:29

to the impacts of the

00:44:30

energy transition on critical minerals

00:44:32

and base Metals startled by

00:44:36

what agreement talking about now,

00:44:39

there's definitely an increase in

00:44:40

the amount of minerals that

00:44:43

are coming online and being

00:44:46

necessary to drive a lot

00:44:49

of the renewable energies in

00:44:50

the technologies that we're going

00:44:51



to need to actually decrease

00:44:53

the level of carbon emissions

00:44:54

in the future going back

00:44:57

to some of the things

00:44:58

that you talked about the

00:44:59

very beginning as well as

00:45:00

some of the Investments 300

00:45:02

billion last year 2020 with

00:45:05

the majority of that coming

00:45:06

from developed countries or developing

00:45:08

countries. A lot of these

00:45:10

minerals are actually in areas

00:45:12

where the countries are developing

00:45:14



countries. So you've got the

00:45:15

elements that were talking about

00:45:17

here. You got the gross

00:45:18

you got the necessary of

00:45:19

new materials and then you've

00:45:21

also got them being in

00:45:22

countries that are still developing

00:45:24

all these minerals aren't necessary

00:45:28

just for electric vehicles, but

00:45:30

it's been obviously wanted to

00:45:31

get drivers as well. We

00:45:33

talked about some Bill letters

00:45:35

and storage even with turbines

00:45:37



will not take carbonara the

00:45:40

copper. So there's been a

00:45:42

huge demands in those areas,

00:45:43

but the amount of lithium

00:45:46

has increased significantly in from

00:45:50

this patch. You can see

00:45:51

that countries like the us

00:45:53

but all around are determining

00:45:56

what are the critical minerals

00:45:57

that they need for their

00:45:59

economy and also then class

00:46:01

find them for National Security

00:46:02

issues. So the US came

00:46:04



out with 50 new minerals

00:46:05

that they defined as critical

00:46:07

in 2022 and they base

00:46:10

it on. What is the

00:46:12

importance for their energy security

00:46:14

and also then the supply

00:46:16

risk and you can see

00:46:17

that at the top right

00:46:19

corner in the red is

00:46:20

that lithium which was mentioning?

00:46:24

It has the most important

00:46:26

and it also has a

00:46:29

large Supply risk because a

00:46:31



lot of the lithium comes

00:46:32

from lifting triangle down in

00:46:34

Latin America love it's clearly

00:46:37

still under development and coming

00:46:40

from those areas. There's a

00:46:42

high importance but then similar

00:46:45

to I think some other

00:46:46

issues said you paid her

00:46:47

to some hotels and we

00:46:49

talked about here is the

00:46:50

list price volatility is for

00:46:51

those spikes. So the lithium

00:46:53

price is similar to some

00:46:54



of the copper but maybe

00:46:55

to a higher degree had

00:46:57

spiked Jail recently purchase a

00:47:00

battery electric vehicle batteries, as

00:47:03

I think I'm down in

00:47:04

price is significantly same thing

00:47:05

with solar panels for the

00:47:06

last decade the cost have

00:47:09

actually gone down significantly, but

00:47:11

there are increases in specific

00:47:13

materials that are created by

00:47:15

some of these shocks and

00:47:17

additional government incentives that were

00:47:21



put in in 2020 21

00:47:23

22 Alex accelerated some of

00:47:25

the roads in the lithium

00:47:26

areas, but then the back

00:47:28

she obviously decline that shock

00:47:30

has been creating ripples throughout

00:47:33

then the market where there's

00:47:35

not as much investment going

00:47:36

into that was discussed at

00:47:39

10 to 15 years, but

00:47:41

it's not just about those

00:47:42

rare earth metals. It's also

00:47:44

about some of the other

00:47:45



areas and it's in that

00:47:46

copper base is one of

00:47:48

the bigger areas that will

00:47:50

highlight the price fluctuation because

00:47:54

people haven't figured out exactly

00:47:55

how the technology will be

00:47:57

used. Now. Sometimes they're coming

00:47:59

out with situations where copper

00:48:00

is very heavy heavy metal

00:48:01

lithium is lighter. So can

00:48:03

we use more lithium and

00:48:04

less copper and some of

00:48:05

the batteries it actually then

00:48:06



increases and decreases some of

00:48:08

those Supply shifts that are

00:48:10

needed to the Future and

00:48:11

some of the development and

00:48:12

impacting some of these needs

00:48:14

but going back to some

00:48:15

of the issues or talking

00:48:16

about 18 million tons of

00:48:18

new minerals that are going

00:48:21

to be needed by 2030.

00:48:23

So just adding on to

00:48:26

some of the comments you

00:48:27

I was there to find

00:48:28



out nothing but the copper

00:48:29

increases as well most amount

00:48:33

of copper is actually currently

00:48:34

being mined in a chili.

00:48:36

That's not to say that

00:48:37

but they have again a

00:48:42

large supply of lithium there

00:48:43

one of the lift in

00:48:45

triangles and then also have

00:48:47

massive amounts of copper. So

00:48:48

the mines that are actually

00:48:50

in operation in Chile are

00:48:52

very important and copper was

00:48:55



added to the Strategic minerals

00:48:57

to the United States in

00:48:58

their 2022 list of the

00:49:00

50 top that they need.

00:49:03

This is a graft of

00:49:07

created by CRA which reports

00:49:09

on a Latin American reports

00:49:12

on the amounts of copper

00:49:15

in cases based on the

00:49:17

prices. So we're talking about

00:49:18

some of the price fluctuations

00:49:19

some of the things that

00:49:20

create disputes. I'm you can

00:49:22



kind of see here that

00:49:23

there is some correlation and

00:49:25

went a perfect but you

00:49:26

know, you got some serious

00:49:27

issue where these are in

00:49:29

constant dollars not nominal dollars

00:49:32

for the price values. So

00:49:34

you going back to all

00:49:35

the way back to 1999

00:49:36

where when the price spikes

00:49:39

of certain minerals such as

00:49:41

copper you see a high

00:49:42

level of the disputes. So

00:49:45



I think you're as we're

00:49:47

seeing these additional minerals that

00:49:48

are being mined additional Supply

00:49:51

shocks because of reductions in

00:49:54

export restrictions that just happened

00:49:58

recently won the minerals that

00:49:59

was listed in that first

00:50:01

fly with a car's is

00:50:02

a graph Graphite graphite is

00:50:05

not a very expensive mineral

00:50:06

but it's one of the

00:50:07

largest component is that they

00:50:09

use an electric vehicle batteries

00:50:10



and soon after the United

00:50:12

States restrict the amount of

00:50:14

Technology chips that can be

00:50:16

exported to China China imposed

00:50:18

restrictions on the amount of

00:50:20

battery quality graph. I think

00:50:22

I should be exported. So

00:50:24

you've seen some of those

00:50:25

issues that are already starting

00:50:26

to creep in going back

00:50:28

to some of the lithium

00:50:29

issues. This is just showing

00:50:30

that it's actually already started

00:50:31



you have the number of

00:50:32

cases that are starting up

00:50:34

in the lithium dispute area

00:50:36

are only going to increase

00:50:38

I've only had a couple

00:50:41

shear and the first one

00:50:42

is in chili the Simcoe

00:50:43

verse the Republic of chili

00:50:44

hasn't been found yet the

00:50:46

front and it now this

00:50:47

is related to basically the

00:50:49

rights to a minor concession

00:50:52

the Democratic Republic of Congo

00:50:54



the sand mining versus PvZ.

00:50:58

This is a long long-running

00:51:01

dispute with 6 parallel. He

00:51:03

says and it's around the

00:51:06

actual ownership because the ownership

00:51:08

of some of these structures

00:51:09

are very very complicated. So

00:51:10

you got a rights issue.

00:51:13

You got a an ownership

00:51:16

issue and the last issue

00:51:18

with ginger versus lipco. It's

00:51:22

a Chinese based company. That's

00:51:23

fine arbitration in connection to

00:51:25



an optic agreement. So you've

00:51:27

got now a contract issue

00:51:30

basically on some of these

00:51:31

cases so you've got issues

00:51:32

across all spectrums of the

00:51:34

legal areas that are ripe

00:51:36

for dispute resolutions. Great. Thank

00:51:41

you so much Ken Jose.

00:51:43

Do you have anything to

00:51:44

add here? And I'd like

00:51:48

to go back to Alicia

00:51:50

outside ESG because again, it

00:51:56

seems to me that this

00:51:57



is an area where the

00:52:00

problem is perceived as being

00:52:04

considered for quite a while

00:52:05

since I'd have to be

00:52:09

made or mines that produces

00:52:14

gold and that produce copper

00:52:15

in Latin America. And Africa

00:52:17

vs. PSG is not is

00:52:21

not new or he's not

00:52:23

interested to is a rare

00:52:28

materials. I needed to remind

00:52:30

to to for the renewal

00:52:33

project. The way those were

00:52:35



treated in the past was

00:52:38

the people talks about a

00:52:39

special license and they tried

00:52:41

to model that by either

00:52:43

increasing the cost or By

00:52:47

increasing the cost of equity

00:52:49

and does the wac. And

00:52:52

that's the way they would

00:52:53

try to retrieve or pray

00:52:54

this issue into the actual

00:52:57

violation of the damage what

00:53:03

I think he's is different

00:53:04

in these are renewable cases

00:53:06



and it's connected to one

00:53:08

one of the issues that

00:53:09

was talked about before is

00:53:11

this notion of legitimate expectations

00:53:13

and the same way one

00:53:17

could argue that maybe 20

00:53:20

years ago. It wasn't obvious

00:53:22

that The Sovereign would change

00:53:29

its regulatory framework to take

00:53:34

into account. Whatever would have

00:53:36

what's happening in the country,

00:53:38

but now after 20 years

00:53:40

experience as a safety investor

00:53:44



today. Incorporate that into way

00:53:47

he calculates its profitability expectations

00:53:58

changing through time and consideration

00:54:01

with respect to BSG that

00:54:03

may not have been very

00:54:04

prominent 20 years ago are

00:54:06

considering portnow articulating the new

00:54:09

both area and that has

00:54:12

something directly to do with

00:54:13

the way we estimate damage

00:54:16

doing it we go back

00:54:18

to the notion that using

00:54:22

the DCF message to estimate

00:54:27



may not be as appropriate

00:54:29

as using the notion of

00:54:33

a U-turn and turn over

00:54:35

to return song. Attributable to

00:54:48

the attractions to some specific

00:54:51

characteristics of the renewable sector.

00:54:56

Perfect. Thank you so much

00:54:57

Jose. I'm tired. You have

00:54:59

anything to say to close

00:55:00

out this topic the critical

00:55:09

mineral Industries all the elements

00:55:11

of a future disputes. I

00:55:13

think I think we all

00:55:15



see that and in fact,

00:55:16

I think it's already happening

00:55:18

just one example comes to

00:55:21

mind Mexico to steps to

00:55:23

initialize lithium sector not too

00:55:26

long ago. They're already are

00:55:27

cases against Mexico in holding

00:55:29

with um, I think this

00:55:31

is just an example of

00:55:33

what to expect in the

00:55:34

future. On Kansas point of

00:55:37

graphite that I think it's

00:55:39

actually a very interesting thing

00:55:41



that might be specific to

00:55:42

critical minerals in a way

00:55:45

and that is that some

00:55:46

countries might be using their

00:55:50

natural resources of critical minerals

00:55:53

as a foreign policy to

00:55:55

and that's Example of China

00:55:57

in particular where I send

00:55:58

my transcripts the United States

00:56:00

has restricted export of artificial

00:56:04

intelligence chips with China and

00:56:07

put in the China announced

00:56:09

export controls on grass height

00:56:11



of which it is the

00:56:12

largest producer reportedly be going

00:56:20

into FX tomorrow. So we'll

00:56:23

see what impact that has

00:56:25

on the supply of graphite

00:56:28

to the United States, but

00:56:29

that's an important element in

00:56:31

the mix. You saw the

00:56:33

picture with the car. I

00:56:35

have a 66.3 mg of

00:56:37

what goes into a graphite

00:56:39

so I think it will

00:56:41

be one interesting future. I

00:56:43



expect to see whether investors

00:56:45

will end up being called

00:56:48

caught in the middle of

00:56:50

this Dynamic of states. Environmental

00:57:05

and social of governance send

00:57:08

Insurance definitely today is going

00:57:10

to be the clear issue

00:57:11

send me stasis and will

00:57:13

continue to have to be

00:57:16

to be the case. So

00:57:18

I think again for for

00:57:20

investors from the forward-looking perspective,

00:57:25

we will see something similar

00:57:27



as we might expect in

00:57:29

the renewable energy space that

00:57:32

is that investors will look

00:57:34

very hard at that existing

00:57:36

treaties. Think about how they

00:57:39

do smack male evolve and

00:57:41

structure themselves in a way

00:57:42

that they were looking for

00:57:44

Fiction's not only has three

00:57:46

this existed today, but also

00:57:48

that with respect to what

00:57:49

might happen in the future.

00:57:50

So for example, if you

00:57:51



see that, you know, what

00:57:54

particular country is 3 Thinking

00:57:56

gets investment treated program and

00:57:58

thinking about putting that back.

00:58:00

You wouldn't want to look

00:58:01

be protected only by the

00:58:04

country's investment to take this

00:58:06

obviously will be looking for

00:58:07

other place restaurant. Make a

00:58:16

new engine. Better back to

00:58:19

you. Okay, so just to

00:58:23

introduce the topic by way

00:58:25

of background. What is geoengineering.

00:58:27



It refers to large scale

00:58:31

scale of manipulation of the

00:58:33

Earth's natural systems to counter

00:58:37

climate change and thinks Guam

00:58:44

is solar radiation management and

00:58:48

that involves reflecting some of

00:58:50

the solar radiation back into

00:58:52

space as a way to

00:58:53

control climate change. The second

00:58:58

is the removal of carbon

00:59:00

dioxide from the atmosphere and

00:59:03

either storing it over with

00:59:05

using it. Carbon capture and

00:59:10



the therapist weather modification now

00:59:14

as the large-scale and Standalone

00:59:17

basis, which is what you've

00:59:19

always understood mostly run by

00:59:22

the term geoengineering. None of

00:59:26

these things are really happening

00:59:28

today. They are at the

00:59:30

state scientific research and that's

00:59:34

research points to significant risks

00:59:39

of today. So we don't

00:59:41

need the discussion that we

00:59:43

will be having a sum

00:59:44

of thirty or ethical in

00:59:46



that the geoengineering in the

00:59:47

true sense of the world

00:59:49

really is not happening today

00:59:50

at the Sketcher already under

00:59:54

way as an attachments to

00:59:58

existing existing industrial processes and

01:00:03

power generation. And so for

01:00:06

example. According to the International

01:00:08

Energy agency there already are

01:00:12

about 40 existing operating carbon

01:00:15

capture facilities attached to various

01:00:17

industrial plant and processes around

01:00:20

the world today. And this

01:00:22



is a booming area. There

01:00:24

are literally hundreds of again

01:00:27

more than 500 according to

01:00:29

the agency pro tricks that

01:00:31

are being developed right now

01:00:33

or being planned for Cardinals

01:00:35

catcher. So this this is

01:00:37

a new industry that is

01:00:38

coming up with keeping an

01:00:40

eye on floor and we

01:00:44

shall see whether it involves

01:00:47

along the lines of what

01:00:48

we've seen for example of

01:00:50



variable power generation International framework

01:00:57

related to geoengineering there really

01:01:01

isn't any multilateral treaty machine

01:01:05

at this point that would

01:01:06

address Engineering specifically or expressly

01:01:10

do some commentators have observed

01:01:15

that your engineering actually might

01:01:17

even compatible with existing local.

01:01:20

I throw environmental treaties such

01:01:22

as the UN framework convention

01:01:23

on climate change and the

01:01:25

Paris agreement and that is

01:01:28

because geoengineering might create incentives

01:01:31



against reducing emissions. So will

01:01:34

you look so pretty a

01:01:36

when it comes to carbon

01:01:37

capture. Although it doesn't remove

01:01:39

carbon dioxide or carbon dioxide

01:01:41

from the atmosphere according to

01:01:43

those commentators. It might create

01:01:45

an incentive against reducing conditions

01:01:48

and therefore ultimately defeat the

01:01:53

purpose of climate Target. And

01:01:57

if you are interested in

01:01:59

getting worried about this sign

01:02:02

some paper published an opinion

01:02:03



on this, I found online

01:02:07

if you Google it. It's

01:02:09

an interesting vacations under human

01:02:16

rights instruments with respect to

01:02:19

China during during this is

01:02:20

another area where that there

01:02:22

would be tension government has

01:02:33

released the White House report

01:02:36

on June 30th of this

01:02:37

year addressing specifically solar radiation

01:02:41

management and it says that

01:02:44

we're asking United States government

01:02:47

of this point does not

01:02:49



have plans to conduct a

01:02:51

comprehensive research of solar radiation

01:02:53

management techniques, you know, if

01:02:57

this might be developed in

01:03:00

the future and the record

01:03:01

goes through the pros and

01:03:02

cons of the various ways

01:03:03

that is that Solar radiation

01:03:09

modification might be in research

01:03:11

and develop so it's very

01:03:12

interesting to to see that

01:03:15

to the US government is

01:03:16

focusing specifically on this do

01:03:19



European commission for its art

01:03:21

issued a statement around the

01:03:24

same time June 28th of

01:03:26

this year in which is

01:03:28

sad that it does not

01:03:29

consider geoengineering to be the

01:03:31

solution to climate change because

01:03:35

it does not address the

01:03:36

real problem and that is

01:03:39

the increase of global greenhouse

01:03:41

gas. And if so what

01:03:47

lessons can we draw from

01:03:49

from the discussion we had

01:03:52



about renewable energy and Mining

01:03:55

faces for geoengineering get the

01:03:59

dogs go for work. So

01:04:01

I'm thinking if we get

01:04:04

States actually move forward with

01:04:06

GPO engine. Drink and do

01:04:09

it in a similar way

01:04:10

as they did for me

01:04:11

all those who think that

01:04:12

they sent this or regulatory

01:04:15

regimes that the receipts to

01:04:16

bring private investment into this

01:04:19

area and Lady. Maybe there

01:04:25



is a sentence for provide

01:04:36

us with carbon capture passivity.

01:04:38

Is that sort of thing

01:04:38

then I think we have

01:04:41

a similar Dynamic that it

01:04:43

was found at the beginning

01:04:44

of your profits ultimately depend

01:04:47

on what the government gives

01:04:48

you. It's a very long-term

01:04:50

investment. And so again, this

01:04:53

would be a certain area

01:04:56

for a investor-state dispute another

01:05:00

possibility might be that Activities

01:05:07



mean encourage your engineering go

01:05:09

wrong and call Sagar nursing

01:05:11

bags. Let's say in an

01:05:13

area of the state that

01:05:14

has permitted them or that

01:05:17

has carried them out. And

01:05:20

so one can Envision for

01:05:22

example of scenario where a

01:05:24

solar management measures implemented. It

01:05:31

is very effective at what

01:05:33

it what it does at

01:05:34

the same time as it

01:05:35

reduces the solar irradiation of

01:05:38



solar power plants that exist

01:05:40

in that country's territory and

01:05:43

investors in those plans might

01:05:47

have the earthquake in less

01:05:48

than 3 declaring claims against

01:05:50

the government for allowing something

01:05:52

that has led to a

01:05:54

reduction of the efficiency of

01:05:55

solar panels. It's already beginning

01:06:09

to with respect to carbon

01:06:10

capture those investors. I think

01:06:12

will be well advised to

01:06:14

consider themselves. Okay, thank you.

01:06:20



Thank you so much better.

01:06:21

I think that we may

01:06:23

have time for one or

01:06:26

two quick questions from the

01:06:27

audience if anyone has questions.

00:00:00

Ellis starting with know who

00:00:09

you aren't there. Lion King

00:01:00

and Thank you everyone for

00:01:06

being here and thank you

00:01:07

very much to widen case

00:01:09

and Peter. Thank you very

00:01:10

much for the support of

00:01:11

the firm Dara. Thank you

00:01:12



very much as well. It's

00:01:14

our fourth fourth day of

00:01:17

Washington arbitration week and we

00:01:20

have the pleasure of of

00:01:22

one being here. But also

00:01:24

talking about 11 key topic

00:01:27

which are climate change and

00:01:30

the environment and basically I

00:01:34

would like to keep it

00:01:35

short for those that might

00:01:37

not know me, but my

00:01:38

name is Jose Antonio Rivas

00:01:39

and co-founder of Washington arbitration

00:01:42



week together with you and

00:01:43

Laird and I would like

00:01:46

to introduce our moderator today

00:01:48

at Dara Brown. She is

00:01:50

an associate in one case

00:01:53

international arbitration group. And she

00:01:56

represents and advises private parties

00:01:58

in foreign Sovereign in in

00:02:00

the resolution of international dispute

00:02:02

or practice focuses on investment

00:02:04

treaty and Commercial arbitration as

00:02:06

well as public international law.

00:02:07

She has represented clients in

00:02:09



the albertine arbitration before various.

00:02:15

Parties in and tribunals under

00:02:18

the ICC rules under exit

00:02:20

and and all the rules.

00:02:21

She has also represented clients

00:02:24

in a variety of purple

00:02:25

mattress, and and she graduated

00:02:29

with honors from Cornell Law

00:02:31

School, or she served as

00:02:33

editor for both at Journal

00:02:34

of public policy and the

00:02:38

Supreme Court Burlington, Adara has

00:02:41

also worked on matters related

00:02:43



to the environment hands. She

00:02:44

is now being a motivator

00:02:48

of this panel and the

00:02:49

I will let you resent

00:02:52

our panel. Thank you. Thank

00:02:55

you so much. Let's try

00:02:58

this again. Welcome everyone to

00:03:00

fourth day of Washington arbitration.

00:03:02

We thank you for attending

00:03:05

our event today. We will

00:03:07

discuss International arbitration in the

00:03:09

era of climate change renewable

00:03:10

energies geoengineering and the critical

00:03:13



mineral industry. So I'd like

00:03:15

to introduce our esteemed panelist

00:03:17

first off with Dr. Jose,

00:03:19

Alberto. Dr. Barrow the senior

00:03:22

managing director at FTI Consulting.

00:03:24

He has more than 40

00:03:25

years of experience focusing on

00:03:27

applied economic and financial modeling

00:03:29

in numerous Industries, including oil

00:03:31

and gas consumer goods and

00:03:33

Telecommunications specializes in Damages estimation

00:03:38

and international arbitration matters in

00:03:40

antitrust along with economic impact

00:03:42



analysis and tariff design and

00:03:44

water electricity and natural gas

00:03:46

Industries in ICC arbitrator as

00:03:50

well. Next I'd like to

00:03:52

introduce Ken Kratz, Cottleville. And

00:03:57

cans right next to me

00:03:58

can the current partner at

00:04:00

H&K he has over 20

00:04:02

years of experience in valuation

00:04:03

and forensic accounting. He specializes

00:04:05

in Damages called quantification valuation

00:04:08

and complex Financial modeling. He's

00:04:11

been appointed as a testifying

00:04:13



expert and assisted the named

00:04:14

expert in more than 40

00:04:16

arbitrations involving Renewables and Mining

00:04:19

dispute with experience as a

00:04:22

testifying expert he works for

00:04:23

an investment Bank in New

00:04:24

York and has held various

00:04:26

corporate finance and Regulatory positions

00:04:28

at Lockheed Martin and the

00:04:29

SEC. Next we have Misty

00:04:33

raasch Garrett Rush. He is

00:04:36

the managing director at Secretariat.

00:04:38

He's healthy as he's spent

00:04:41



over the last two decades

00:04:42

and by the clients and

00:04:44

providing expertise on critical issues

00:04:46

involving valuation finance and economics.

00:04:50

His work has been Industries

00:04:52

including Financial Services Telecom Mining

00:04:54

and all aspects of Garrett

00:04:57

has been recognized by whose

00:04:59

whose legal as technically outstanding

00:05:01

and among the very very

00:05:02

best prior to joining Secretariat

00:05:04

Miss Rush works for a

00:05:06

managing management consulting firm focusing

00:05:09



on developing Revenue enhancement strategies

00:05:11

for private equity-backed companies. And

00:05:14

he was at the kid

00:05:14

in both France and the

00:05:15

United States. Lastly we have

00:05:20

had her plastic is a

00:05:23

partner at Wayne case. He

00:05:25

has more than 20 years

00:05:26

of experience as an international

00:05:28

law attorney who specializes in

00:05:30

investment treaty arbitration International commercial

00:05:33

arbitration public international law and

00:05:35

the protection of foreign investments.

00:05:37



He has experience working with

00:05:38

clients in a number of

00:05:39

Industries, including mining and mineral

00:05:42

processing electricity generation Supply and

00:05:45

distribution telecommunications oil and gas

00:05:48

real estate in sovereign debt

00:05:49

and more throughout. The last

00:05:52

decade has been recognized by

00:05:55

various market research institutions such

00:05:58

as legal as a leader

00:06:00

in arbitration. He started off

00:06:02

his career and wine cases

00:06:03

Prague office prior to joining

00:06:05



its DC office in 2003,

00:06:06

and he has he was

00:06:08

educated in both the Czech

00:06:09

Republic United States. I just

00:06:12

want to provide a quick

00:06:13

roadmap for today's discussion will

00:06:15

cover three main topics with

00:06:17

a sub top. Let's say

00:06:18

so first we'll discuss the

00:06:20

rise and renewable energy Investments

00:06:22

and related disputes Maxwell turn

00:06:24

to the future of Renewables.

00:06:26

Well, then change topics in

00:06:27



energy transitions impact on critical

00:06:29

minerals and base metals and

00:06:32

will close out today's session

00:06:33

with lessons. We can draw

00:06:34

from geoengineering. Show me like

00:06:38

to start off with our

00:06:39

first topic which is the

00:06:40

rise and renewable energy investments

00:06:42

in related dispute. And the

00:06:48

first question will go to

00:06:49

can but everyone off course

00:06:51

cannot Pine-Sol 10 and 2015

00:06:55

for the first time in

00:06:56



history developing countries are poorly

00:06:58

Ambassador more renewable energy projects

00:07:00

in developed economies more over

00:07:02

in 2020 investments in renewable

00:07:04

energy projects and mount it

00:07:06

to record of 303 billion

00:07:08

US Dollars, which is more

00:07:09

than seven times the figure

00:07:11

in 2004 this significant growth

00:07:13

in renewable energy Investments has

00:07:15

an obvious correlation with the

00:07:16

rise in renewable energy disputes.

00:07:18

What are factors in your

00:07:20



opinion that are driving these

00:07:22
disputes. Thanks for the thanks

00:07:28
for the great introduction. And

00:07:30
thank you Dwayne case for

00:07:31
hosting us at this important

00:07:33
event on climate change. I

00:07:36
think a couple the main

00:07:37
factors that are driving some

00:07:39
of the increase in disputes

00:07:41
is the actual size and

00:07:43
the gross of the renewable

00:07:45
energy industry and I think

00:07:48
this is a very important

00:07:48



Lee time panel here because

00:07:51

as today is the kickoff

00:07:52

of the 28th cup meeting

00:07:55

in the UAE that they're

00:07:59

going to have 70,000 Representatives

00:08:02

over 200 countries talking about

00:08:04

climate issues and that's going

00:08:08

towards that growth factor or

00:08:10

just today and they were

00:08:11

talking about how the highest

00:08:14

record of climate is in

00:08:17

the u.s. In the night

00:08:18

or in the world in

00:08:19



2023 and currently were out

00:08:22

about 1.4 degrees Celsius. Of

00:08:24

the levels from pre-industrial time

00:08:26

and everybody knows I think

00:08:28

the goals from press cords

00:08:30

have been to keep it

00:08:31

around 1.5 to 2 by

00:08:33

the end of the century

00:08:34

some of the information that

00:08:37

came out showed that we're

00:08:39

not really on a track

00:08:40

towards that passed earlier estimated

00:08:43

about 2° to 2 1/2

00:08:46



degrees Celsius by the end

00:08:47

of the century and it's

00:08:49

a lot better than it

00:08:50

was estimated back in 2010,

00:08:52

which was at 3.5 degrees,

00:08:54

but it doesn't sound like

00:08:56

a lot when you're going

00:08:56

from 1.4 to 2.5. But

00:09:00

really you're talkin about an

00:09:01

80% increase so that increase

00:09:04

in the carbon emissions is

00:09:06

driving the growth towards the

00:09:08

actual increase in the number

00:09:09



of renewable projects that are

00:09:11
need it, but it's not

00:09:14
enough currently. The the plans

00:09:18
that the cop has our

00:09:21
to Bill climber resistance IDs,

00:09:23
which we know that time

00:09:25
too. Actually already occurring. So

00:09:26
we need to build communities

00:09:28
that are ready for those

00:09:29
situations. We need to move

00:09:32
off of fossil fuels some

00:09:34
predict by 2050 to actually

00:09:36
read some of our Net

00:09:37



Zero goals so that we're

00:09:39

not at levels that aren't

00:09:43

in line with our estimates,

00:09:45

but the main area which

00:09:47

is been for that size

00:09:48

as the investment and the

00:09:49

company is talking about that.

00:09:52

We need to inspire commitments

00:09:53

into investments into environmental and

00:09:56

positive projects and practices. So

00:09:59

as you mentioned know that

00:10:00

the size of the growth

00:10:01

is now at three hundred

00:10:03



billion dollars in renewable energy

00:10:04

projects of which is massive

00:10:07

amounts of higher than it

00:10:08

was in the 10 years

00:10:10

prior to 2020. So 2010

00:10:13

to 2019 hit and moderated

00:10:16

around 200. A billion and

00:10:19

before that in the early

00:10:20

2000s, it was significantly lower

00:10:22

at around 50 billion or

00:10:24

less. So there was a

00:10:25

huge growth in the early

00:10:26

2000s Plateau around 2010 to

00:10:29



2020 Malvern another growth space.

00:10:31

Basically where that increased from

00:10:34

2020 of 300 billion is

00:10:37

now at 500 beso half

00:10:39

a trillion dollars. But is

00:10:41

that enough? Is that what

00:10:42

we're talking about us being

00:10:43

enough experts would say no

00:10:47

currently the plan that we

00:10:49

have in place our to

00:10:51

reduce carbon emissions by about

00:10:53

18 of the amount that

00:10:55

we need to reduce by

00:10:56



20 30 in Some estimates

00:10:59

say that actually reach the

00:11:01

levels that we would need

00:11:02

to we would actually have

00:11:05

to double or even triple

00:11:07

the level of investment. So

00:11:09

we're talking about a massive

00:11:10

amount of investment in a

00:11:13

relatively short a time. So

00:11:15

that increase in the size

00:11:17

in the increase in the

00:11:20

time. When it actually need

00:11:22

to occur as I was

00:11:23



getting kind of issues that

00:11:24

will end up leading towards

00:11:26

potential additional disputes the funding

00:11:30

Gap as well right now

00:11:31

on just the plants not

00:11:33

to actually do any type

00:11:35

of abatement but I see

00:11:36

the planes that are already

00:11:37

in place and took meet

00:11:39

our current plans is actually

00:11:41

250 billion underfunded every year.

00:11:43

So there's a lot of

00:11:45

investment that's going to be

00:11:47



coming that needs to be

00:11:48

coming. I think that that

00:11:50

in itself is led to

00:11:53

a lot of disputes and

00:11:54

will continue to lead to

00:11:55

a number of disputes into

00:11:56

the future. Okay. Thank you

00:11:59

so much Ken. Would you

00:12:02

like to add anything? I

00:12:06

knew that Ken would be

00:12:07

dressing discussion. Reading the Wall

00:12:11

Street Journal earlier this week

00:12:13

in this is chart was

00:12:14



in there and I couldn't

00:12:15

help but included it was

00:12:16

in a feel-good story about

00:12:18

how much investment is going

00:12:21

into sold a higher than

00:12:24

it had been originally expected

00:12:25

wind power and Global stock

00:12:29

of battery electric vehicles might

00:12:32

be hard for you to

00:12:33

see but there's three things

00:12:35

I took from these graphs.

00:12:36

What is the darker line

00:12:39

is the actual investment in

00:12:41



capacity and then you can

00:12:44

see that that extends with

00:12:46

the 2023 forecast in its

00:12:47

it's quite vertical and accelerating

00:12:50

but then you can see

00:12:52

really kind of the point

00:12:53

of these charts was from

00:12:56

2000 to 2010 and intervening

00:13:00

years. There have been a

00:13:01

number of projections and all

00:13:03

of those have been under

00:13:04

projected. So there has been

00:13:06

actually a higher than expect.

00:13:10



Investment in solar wind power

00:13:13

capacity and vehicle batteries. And

00:13:17

the reason for this really

00:13:19

is because at the time

00:13:21

in 2009 that we did

00:13:23

not expect the cost of

00:13:25

solar to go down so

00:13:26

much. And right now it's

00:13:28

about 10% of what it

00:13:30

was in 2009 which makes

00:13:33

solar actually the most economic

00:13:36

along with wind power of

00:13:37

any of the of any

00:13:40



of the sources of power

00:13:41

well below on some of

00:13:43

the traditional fossil fuels and

00:13:46

really the story here, but

00:13:48

kind of taking that over

00:13:49

to the disputes world we

00:13:53

think about what what what

00:13:53

creates a fertile environment for

00:13:56

disputes and the first Factor

00:13:59

wrist size of investment, right?

00:14:00

So we have the size

00:14:02

of investment massive investment. We

00:14:04

have massive expected investment needed.

00:14:06



We also changing technology. So

00:14:09

course that creates Lots of

00:14:11

friction and then we have

00:14:14

government intervention government involvement. So

00:14:17

the perfect recipe for international

00:14:20

arbitration. Just looking back at

00:14:23

what can I mean from

00:14:24

the last few years and

00:14:27

this. Leading up to 2023

00:14:30

and really kind of one-story

00:14:36

in my mind, which is

00:14:37

the Spanish solar story. Right?

00:14:40

So you see on the

00:14:42



left you can see the

00:14:42

number of renewable energy awards

00:14:45

that come out. It's dominated

00:14:47

by solar on the right

00:14:49

as you can see most

00:14:50

of those are coming from

00:14:51

West and East Europe and

00:14:54

of those most of those

00:14:55

are coming from Spain. So

00:14:58

why your what created the

00:15:00

Spain disputes? Well, it was

00:15:02

because the cost of store

00:15:04

with so high it's beIN

00:15:06



offered attractive incentives to draw

00:15:08

investors in Does incentives included

00:15:11

according to the investors the

00:15:14

promise of six terrorists according

00:15:16

to Spain it was the

00:15:17

promise of a reasonable rate

00:15:18

of return all of these

00:15:19

disputes have kind of had

00:15:22

a few different debates on

00:15:25

the quantum side, but the

00:15:27

really the big debate that

00:15:29

has differentiated the awards is

00:15:31

whether the tribunal has gone

00:15:32



with a reasonable return approach

00:15:35

was Gone with a fixed

00:15:36

tariff protection. It's almost 50/50.

00:15:39

It's raining a little bit

00:15:40

towards the fixed tariff right

00:15:42

now. I'm just still a

00:15:43

few Awards left to come

00:15:45

out but that is the

00:15:47

end of the debate and

00:15:49

then the resolution looking backwards,

00:15:52

but you're not going to

00:15:53

see that same debate going

00:15:54

for a ride because there

00:15:56



is no need for a

00:15:57

fixed are going for the

00:15:59

incentives going forward or at

00:16:01

least the same incentives that

00:16:02

we saw on past. Thank

00:16:06

you. Great. Thank you so

00:16:07

much Gareth Jose. Do you

00:16:10

have anything to add? couple

00:16:15

couple points one that the

00:16:20

amount of subsidies that governments

00:16:24

have been giving industrial G

00:16:26

Grow Up by fast starting

00:16:29

in 2015, but they have

00:16:32



started to to grow slower

00:16:34
and to take her off

00:16:35
one of the reasons probably

00:16:38
know each other country subjected

00:16:42
to its own political Cycles,

00:16:45
but certainly the increase in

00:16:48
the price of other forms

00:16:50
of energy and particularly of

00:16:53
the gas or the fact

00:16:55
that natural gas has been

00:16:57
going up very fast because

00:16:59
of the war in Ukraine

00:17:01
must be one of them

00:17:05



is said that he disengagement

00:17:10

of governments that's one point

00:17:14

and and the other point

00:17:16

which will probably talk a

00:17:17

little more forward is that

00:17:20

is agreed that the Spanish

00:17:26

lesson start for everyone involved.

00:17:30

This should be very careful

00:17:31

as to what the government

00:17:35

promises to investors but the

00:17:39

increasing investment in in the

00:17:45

electricity or creating a network

00:17:49

effects that because of the

00:17:51



fact that the electricity as

00:17:54

we all know generation of

00:17:56

consumption is highly dependent on

00:17:58

the form the specific form

00:18:02

of the grade of the

00:18:03

network these new sources generation

00:18:08

that are spending around or

00:18:10

changing the dynamic of to

00:18:12

the Of the greed and

00:18:15

daddy's bringing a new generation

00:18:18

of of claims that are

00:18:20

indirectly connected to the sub.

00:18:29

Great. Thank you so much.

00:18:30



Jose. Apetor. Did you have

00:18:32

any final words on this

00:18:33

question a couple of things

00:18:35

so there has been less.

00:18:43

We know a lot of

00:18:44

great number of Paces really

00:18:47

think to renewable energy sources

00:18:48

before Investments with the tribunals

00:18:51

specifically according to the energy

00:18:55

charge of Secretariat, which published

00:18:57

its statistics this may out

00:19:00

of the 158 known cases

00:19:04

under the energy Charlotte with

00:19:05



a 59% related to power

00:19:08

a Renewable Power Generation that

00:19:11

comes to about 93.3 Jason

00:19:15

something like that. It's not

00:19:16

around found about almost a

00:19:18

hundred cases. Which also publishes

00:19:21

its investment with the arbitration

00:19:24

identified about 1,250. Places to

00:19:29

eat and at least 8%

00:19:33

according to youngest out of

00:19:34

these related to the reduction

00:19:39

of clean energy Investments a

00:19:40

very significant number. So I'm

00:19:44



going back to the question

00:19:45

of what is the driver

00:19:46

of these cases in short.

00:19:49

It is a reduction to

00:19:53

incentives that states have provided

00:19:56

to producers of solar electricity

00:20:00

in particular or to produce

00:20:03

a list of renewable energy

00:20:04

source, and let me just

00:20:06

outline the developments in EU

00:20:09

countries such as Spain and

00:20:11

Italy straight the European Union

00:20:15

issued a writ of the

00:20:18



directors in 2020 and 2009

00:20:21

setting for the renewable energy

00:20:24

targets for its member states

00:20:26

in terms of how much

00:20:27

and they're training. To be

00:20:29

produced and consumed out of

00:20:31

renewable sources elected to the

00:20:34

individual member states to implement

00:20:36

how to achieve those targets

00:20:39

and so some countries such

00:20:40

as Italy and Spain adopted

00:20:43

breaking the peace and sent

00:20:46

this to produce results of

00:20:47



solar power. For example in

00:20:49

the formal about market price

00:20:52

with the goal of stimulating

00:20:58

private investment in that area

00:21:00

and the and the building

00:21:01

out of the Renewable Power

00:21:03

sector after that after those

00:21:08

rare humans were put in

00:21:10

place the prices of the

00:21:12

technology drop significant playing this

00:21:14

was in the early 2010,

00:21:16

and that was because technologically

00:21:21

became cheaper to manufacture solar

00:21:22



panels for example in China

00:21:24

and suddenly became too much

00:21:26

cheaper to install. Install these

00:21:29

power plants that it was

00:21:31

at the time when these

00:21:31

regulatory regimes were adopted and

00:21:34

so this created a gap

00:21:36

where there was a lot

00:21:37

of influx of investment into

00:21:38

these are our plans as

00:21:40

investors are seeking to capitalise

00:21:42

on the difference between the

00:21:43

subsidised prices subsidize their menus

00:21:47



and the costs that they

00:21:48

were in kink in real

00:21:49

life. That was one of

00:21:52

the other point was that

00:21:54

many countries found themselves in

00:21:56

a situation where the government's

00:21:59

perceived the regime as being

00:22:02

just too expensive either because

00:22:04

money was running out in

00:22:06

terms of funding these subsidized

00:22:08

prizes or or because politically

00:22:11

it was difficult to be

00:22:12

transferring all the extra charge

00:22:14



to end consumers who ultimately

00:22:16

have to pay I'm so

00:22:19

basically these reviews for a

00:22:20

rolled back the investors who

00:22:23

spent the money when the

00:22:26

original incentive for him swearing

00:22:28

Place felt that this was

00:22:30

unfair to them and started

00:22:32

in less than three the

00:22:33

cases where they have been

00:22:34

less than three different sections.

00:22:35

And that's why we see

00:22:36

this man a arbitrations relating

00:22:40



to the solar sector in

00:22:42

particular. I would say just

00:22:46

in terms of the truce

00:22:47

burden of The Decemberists from

00:22:48

from these cases of the

00:22:53

words focus on the interaction

00:22:55

of investor expectations and the

00:22:59

state's right to to regulate

00:23:00

as we know and the

00:23:03

outcomes are not consistent from

00:23:05

this case even sometimes with

00:23:07

respect to the same country.

00:23:09

I will say though that

00:23:10



one common theme is that

00:23:12

the tribunals first focus on

00:23:15

what exactly are the rights

00:23:17

that The investor hat Under

00:23:19

the domestic relation that was

00:23:20

in place. That's really like

00:23:22

a key element and I

00:23:24

would caution. If you are

00:23:25

reviewing these cases to always

00:23:26

keep that in mind. These

00:23:28

decisions are driven in large

00:23:30

part by the by the

00:23:31

specifics of the particular incentive

00:23:34



for a change that's where

00:23:35

he placed under the national

00:23:36

loss and as much as

00:23:39

anything else in particular going

00:23:43

back to go to Derek's

00:23:44

had the strength of the

00:23:45

tribunal school focus on whether

00:23:47

the universe or sweater guaranteed

00:23:49

a certain price for a

00:23:51

certain duration irrespective of what

00:23:54

if that's the case then

00:23:56

it would imply that the

00:23:57

industry's entitled to keep the

00:23:59



downtown no matter how low

00:24:00

the cost or whether the

00:24:03

Russians were designed to only

00:24:05

provide to the investor services

00:24:07

will be returned as measured

00:24:09

for example by and hypothetical

00:24:12

efficient plant or an efficient

00:24:14

cost basis that sucks and

00:24:17

and you will see This

00:24:18

is an important factor that

00:24:22

drives a lot of the

00:24:24

Divergent outcomes. And the other

00:24:29

common element in these cases

00:24:31



is that once the tribunal

00:24:34

decides what the original looks

00:24:36

like when it comes to

00:24:39

the investors done in terms

00:24:41

of liability the tribunals focus

00:24:43

on how severe or what

00:24:45

is the magnitude of the

00:24:46

changes that that follow through

00:24:49

on either with respect to

00:24:52

what the original wish you

00:24:54

look like or with respect

00:24:55

to the impacts on the

00:24:56

on on the investors. Thank

00:25:02



you so much better. You've

00:25:04

all just describe the factors

00:25:05

driving The Surge the recent

00:25:08

surge in renewable energy Investments

00:25:10

and related disputes. Can you

00:25:12

briefly opine on where you

00:25:14

see things going in the

00:25:15

future and we'll start off

00:25:17

again with you can okay.

00:25:22

Thank you. I guess I'm

00:25:24

going to break it down

00:25:25

into. Two parts because I

00:25:28

think the rest of it

00:25:29



will be covered by the

00:25:29

rest of my life, but

00:25:30

you got the short-term future

00:25:32

and you got the long-term

00:25:33

future. So I'll take a

00:25:33

look at what the short-term

00:25:34

future potentially could look like.

00:25:36

Yeah. I'll just start by

00:25:38

talking about what's happening recently

00:25:40

and I've been talking about

00:25:41

a lot of the gross

00:25:42

lot of people have been

00:25:43

talking about what's needed. We

00:25:45



know it's needed but there's

00:25:46

been a little bit of

00:25:47

a changing landscape particularly recently

00:25:49

and 2023. Anybody follows Marcus

00:25:53

knows that renewable energies by

00:25:56

market cap have taken some

00:25:58

of the biggest beatings that

00:25:59

they've had in the last

00:26:00

decade the company's yelled at

00:26:04

are out there that are

00:26:06

published aren't either making as

00:26:09

much or it's being a

00:26:10

harder environment and people can

00:26:11



say that it's two different

00:26:13

things. Obviously. The rise in

00:26:15

inflation has caused problems for

00:26:18

many different companies many different

00:26:21

Industries and renewable energies is

00:26:23

obviously one of those Industries

00:26:24

that's taking a big hit.

00:26:26

If these companies that are

00:26:29

going into these long-term projects

00:26:31

are set up where you

00:26:32

live got two different sides

00:26:35

of the equation where maybe

00:26:36

their revenue side is is

00:26:38



may be an extreme that

00:26:39

were talking about some situations,

00:26:40

but then they really thought

00:26:41

about the cost side of

00:26:42

things with the inflation actually

00:26:44

hitting them. The margins are

00:26:46

getting squeezed and I'm not

00:26:47

able to actually continue to

00:26:48

make profit or continued operating

00:26:50

some situations and that's a

00:26:52

real problem for some of

00:26:53

the investors and it's causing

00:26:54

a lot of concern in

00:26:55



the environment. The same thing

00:26:58

you do is set around

00:26:59

interest rates 0 interest rates

00:27:01

have been increasing as inflation

00:27:03

has been increasing as well.

00:27:04

And we've heard the Mantra

00:27:06

that interest rates are going

00:27:07

to be staying higher for

00:27:08

longer. So if you entered

00:27:09

into a long-term contract as

00:27:11

an investor where you didn't

00:27:13

set up your financing to

00:27:16

actually be recuperated by your

00:27:18



operations for whatever reason or

00:27:20

if you had it for

00:27:21

a longer duration than the

00:27:23

term of the project or

00:27:25

shorter duration you Do you

00:27:27

have to be refinancing right

00:27:28

now? So those extra cost

00:27:30

of having to refinance at

00:27:31

rates that are much much

00:27:32

higher for projects that cost

00:27:34

potentially a lot more than

00:27:36

was expected also against wheezing

00:27:38

some of those margins. So

00:27:39



there's a lot of situations

00:27:41

that are causing turmoil in

00:27:43

the market. The investors are

00:27:45

concerned about the longevity of

00:27:48

some of their Investments at

00:27:49

the varsity made and they're

00:27:52

not sure how long the

00:27:53

situations are currently going to

00:27:54

last how long the inflation

00:27:55

is going to be this

00:27:56

High how long the interest

00:27:58

rates are going to have

00:27:59

to be this high and

00:28:00



if that's going to change

00:28:01

in a term in the

00:28:03

short-term, that's God's going to

00:28:05

turn things around you can

00:28:06

see by the stock market

00:28:06

it has it and to

00:28:08

be fair. These stocks had

00:28:10

really high rallies from the

00:28:13

two thousands until baby 2022.

00:28:17

So there's been a bit

00:28:18

of a pullback some people

00:28:20

ask me about 30% 40

00:28:22

% from where they were

00:28:23



a lot of stocks that

00:28:24

are High Flyers had come

00:28:26

back but Those additional costs

00:28:28

are something that is going

00:28:29

to potentially drive to speak

00:28:31

because investors are not in

00:28:34

situations, where are unprofitable situations

00:28:37

and they're trying to figure

00:28:38

out a way to get

00:28:38

out of something with all

00:28:42

the government and we were

00:28:43

talking about some people will

00:28:44

talk about a little bit

00:28:45



more all the government incentives

00:28:47

as well companies are getting

00:28:49

billions and billions of dollars

00:28:50

in tax incentives tariff reductions

00:28:53

and the renewable energy sector

00:28:55

is still struggling with a

00:28:57

situation. So how long can

00:28:58

those benefits continue the last

00:29:00

both of the customers and

00:29:02

two companies a lot of

00:29:05

the terrorists and the benefits

00:29:08

of going to the electrical

00:29:09

vehicle market now for government

00:29:12



One China has just been

00:29:13

renewed until 2025 so as

00:29:15

a 72 billion dollar investment

00:29:17

right there. How long can

00:29:19

they be sustained? That's another

00:29:21

area of turmoil that's going

00:29:23

to probably cause no additional

00:29:25

disputes, but overall a In

00:29:26

the short-term the amount of

00:29:29

risk and the risk appetite

00:29:31

of people is going to

00:29:32

get questioned if it hasn't

00:29:35

already been on so some

00:29:37



of the investments in short-term

00:29:38

are likely going to be

00:29:40

harder to actually come by

00:29:42

because people are going to

00:29:43

be a little more risk-adverse

00:29:44

and that's not necessarily a

00:29:47

sign that there's going to

00:29:50

be less. It's because again

00:29:52

in European the situation we

00:29:53

have a concession and you're

00:29:54

actually supposed to perform on

00:29:55

something by certain kind of

00:29:56

time putting a certain amount

00:29:57



of investment actually produce and

00:30:00

you can't do it now

00:30:01

because you don't have the

00:30:02

finances are you can't afford

00:30:03

to make a profit. So

00:30:04

you hold off for two

00:30:06

or three or four years.

00:30:07

Are you going to actually

00:30:08

be allowed to keep that

00:30:09

again legal issues that will

00:30:10

definitely be considered again feeding

00:30:13

more potential dispute. Great. Thanks

00:30:16

so much, Jose. All these

00:30:21



things to you. Where do

00:30:22

you see things going in

00:30:23

the future? I agree with

00:30:28

whiskey. that There's going to

00:30:34

be an increasing number of

00:30:35

disputes. They will because the

00:30:43

drivers as as he said

00:30:47

this is the continues to

00:30:50

be a very we ski

00:30:52

area. There's other parts of

00:30:55

the risk involved in activities

00:30:58

that hasn't been fully exhibited

00:31:00

the relationship between investors and

00:31:07



government is not totally settled

00:31:10
and I think that to

00:31:14
come back to my previous

00:31:17
comment and then expand on

00:31:18
that. We are going to

00:31:22
start seeing what I would

00:31:24
call kind of indirect effects

00:31:26
of using zesty investments in

00:31:28
renewable is not the ones

00:31:30
that are directly connected with

00:31:34
The establishment of plants is

00:31:37
a solar or wind as

00:31:39
I have to do for

00:31:40



example, the behavior of the

00:31:43

network in the understanding that

00:31:46

the wizard Network Behavior may

00:31:49

have a very important impact

00:31:51

on the profitability of the

00:31:54

investor, but there's so many

00:31:59

countries are in Latin America

00:32:01

and in other parts of

00:32:04

the world. Government still own

00:32:09

either the only generating company

00:32:14

in the country or at

00:32:16

least have an incumbent and

00:32:18

that the issues that have

00:32:21



to do with the dispatching

00:32:23

of howling electricity citing to

00:32:27

the network Mexico to be

00:32:32

diplomatic experimenting with that by

00:32:35

changing all the rules. It

00:32:38

had established some years ago

00:32:40

as to how the electricity

00:32:41

is dispatched and given the

00:32:47

clear difference between generating electricity

00:32:49

party. Some periods of the

00:32:52

year of the of the

00:32:53

day with the wind and

00:32:56

solar or generating it with

00:32:58



hydrocarbons. The profitability of incumbents

00:33:04

company is a function of

00:33:07

The dispatching rules. So there's

00:33:10

an attack on dispatching room.

00:33:12

This is the type of

00:33:15

kind of indirect effects are

00:33:16

what I was talking about.

00:33:17

And I want thing that

00:33:20

I find extremely interesting is

00:33:21

that He should remain as

00:33:26

to how do you measure

00:33:28

the the Democrats or the

00:33:31

alleged Damage Done to the

00:33:33



investor whether it is with

00:33:35

more, I would call them

00:33:37

traditional DCF message or as

00:33:41

well as mentioned before considerations

00:33:44

about the profitability of the

00:33:47

investment. For example with the

00:33:49

calculations of the irr in

00:33:51

comparison to with some benchmarks.

00:33:54

So I think we're going

00:33:57

to see a lot more

00:33:58

cases probably different from the

00:34:02

ones that we've seen in

00:34:03

Spain and they will bring

00:34:06



to the for discussions about

00:34:09

some parameters. That have been

00:34:13

hidden in most of our

00:34:14

discussions about vibration. Great. Thank

00:34:19

you so much Jose. I'm

00:34:21

Garrett. What can we expect

00:34:22

in the next decade in

00:34:24

terms of Renewables by Tommy?

00:34:31

I think it if you

00:34:33

think about your what are

00:34:34

legitimate expectations right now and

00:34:38

we expect continued solar we

00:34:41

expect continued wind. What does

00:34:43



that do to the profile

00:34:45

of generating capacity? Well and

00:34:48

increasing percentage is going to

00:34:49

Renewables and what's unique about

00:34:51

Renewables. Is there a little

00:34:54

more unpredictable than the hydrocarbon

00:34:55

resources, right? So Jose is

00:35:04

in electricity grids right across

00:35:07

the bridge that can accommodate

00:35:08

and reach all of these

00:35:10

different plants. The other area

00:35:14

that is consistent with this

00:35:16

new profile of our energy

00:35:18



source is energy storage, right?

00:35:20

We talked a lot about

00:35:21

energy storage. I think we're

00:35:23

getting close to a large-scale

00:35:25

energy storage for electricity grids

00:35:29

the last piece that has

00:35:31

to take place and I'm

00:35:32

sure this is going to

00:35:33

come out of cop 28

00:35:35

and it's going to create

00:35:36

lots of issues in the

00:35:37

next couple decades is carbon

00:35:39

capture the people talk a

00:35:41



lot about carbon capture, but

00:35:43

there hasn't been a lot

00:35:44

of a lot of initiative

00:35:46

around it both in taxing

00:35:49

it and then I'll sell

00:35:50

the technology to implement the

00:35:52

incentives on a global scale

00:35:54

do not exist yet. And

00:35:56

at the same time we

00:35:57

need to implement carbon capture

00:35:59

to reach the goals that

00:36:01

they should be the world

00:36:03

has to reduce carbon emissions.

00:36:08



Thank you so much get

00:36:09

better the couple of quick

00:36:13

points. So the renewable energy

00:36:16

industry and Renewable Power production

00:36:20

in particular. I think has

00:36:23

some system of features that

00:36:24

just make it particularly susceptible

00:36:27

to political risk and conducive

00:36:30

to and less than 32

00:36:31

disputes. That's because there is

00:36:33

a large outlay of capital

00:36:35

at the beginning of those

00:36:37

Portraits Innovation. They rely on

00:36:41



government incentives and or they

00:36:44

rely on regulatory regimes that

00:36:47

the government put in place

00:36:48

and the lifespan of these

00:36:50

projects far far out lives

00:36:54

of the duration of her

00:36:55

over any particular government. So

00:36:58

these factors are not going

00:37:01

to go away they will

00:37:03

always be there. I think

00:37:05

the investor will be always

00:37:06

facing these issues. And what

00:37:09

that will mean also in

00:37:10



light of the jurisprudence of

00:37:12

this emerging underinvestment 3DS with

00:37:14

something very sizable Awards in

00:37:16

favor of investors is that

00:37:18

investors will continue to seek

00:37:20

the protection of investment treaties

00:37:22

and try to structure themselves

00:37:23

in a way that will

00:37:25

bring them Perfection under those

00:37:27

treaties and I think it

00:37:30

will be interesting to see

00:37:31

how that they were in

00:37:32

the future because there has

00:37:34



been a lot of pushback

00:37:36

against investment treaties recently a

00:37:38

number of states have renegotiated

00:37:41

them or terminate them did

00:37:43

the European in there is

00:37:45

a space them out or

00:37:49

so the European commission things

00:37:51

within the European Union. And

00:37:54

so I think we will

00:37:55

see a lot of maybe

00:37:57

more sophisticated investment 3 to

00:38:00

start drink by Future investors

00:38:02

seeking right away through the

00:38:04



remaining three pieces are still

00:38:06

out there to get some

00:38:07

meaning Perfections another point I

00:38:11

wanted to mention is if

00:38:14

investment three days are in

00:38:18

a terminated and disappear at

00:38:22

some point in the future.

00:38:23

I will not be at

00:38:26

the end of a quasi

00:38:29

investor-state arbitration dispute resolution because

00:38:34

what will happen is that

00:38:35

we might Reverb revert back

00:38:37

to the situation that existed

00:38:39



before investment treaties when the

00:38:42

more powerful investors when the

00:38:44

stink in developing countries in

00:38:46

particular are able to get

00:38:49

an investment contract with the

00:38:50

government that has an arbitration

00:38:51

clause and all that is

00:38:56

not the law of the

00:38:57

host state. So I think

00:39:01

some form of investor State

00:39:03

resolution in this area is

00:39:05

here to stay question I

00:39:07

think is Whether the smaller

00:39:09



investors who do not have

00:39:11

the power to negotiate a

00:39:12

special deal with the government

00:39:16

will be left out of

00:39:17

this if investment treaties are

00:39:19

not there. Thank you so

00:39:22

much better. I'm moving on

00:39:24

to our next topic critical

00:39:26

minerals and base Metal Products

00:39:27

disputes. I'll start off with

00:39:29

you Garrett. The energy transition

00:39:32

has also come in a

00:39:33

significant cost and the direct

00:39:35



impacts are manifesting within the

00:39:36

global supply of critical minerals.

00:39:38

What are some key takeaways

00:39:39

with respect and the energy

00:39:42

transition impact on critical minerals

00:39:44

and base metals. Extractive Industries

00:39:50

have always made up a

00:39:51

big part of the cases

00:39:52

in the case in the

00:39:54

exit caseload. So I think

00:39:56

most recently it's been about

00:39:57

25% I think that's consistent

00:40:00

with the past Trends you

00:40:03



can see here. This is

00:40:06

a graph of the demand

00:40:10

for materials. And so they

00:40:12

include new Plastics and building

00:40:15

materials and materials and metals

00:40:17

in this. Mrs. McKenzie DeGraff.

00:40:19

You can see there's a

00:40:21

picture of a couple lesson

00:40:22

1 there's been a significant

00:40:25

increase over the two 2020-22.

00:40:30

It's also quite volatile, right?

00:40:32

These are nominal I use

00:40:34

nominal prices in the so

00:40:35



you can see the effect

00:40:37
of price swings as shown

00:40:39
in these in his chart.

00:40:40
So it's swings quite a

00:40:43
bit. I think it We

00:40:47
think of Renewables as creating

00:40:49
a dematerialize world one fact

00:40:51
this transition has increased the

00:40:54
use of materials and necessarily

00:40:56
so write in order to

00:40:57
create the structures. We need

00:41:00
for renewable energy. We actually

00:41:03
need to expand and use

00:41:05



more more materials and that's

00:41:07

part of what this charge

00:41:09

is. And then you know,

00:41:13

I think we were familiar

00:41:14

with things like lithium and

00:41:18

Cheerios like lithium are in

00:41:20

the headlines every day with

00:41:22

the just massive increase in

00:41:23

demand. It's both necessary and

00:41:26

then there's always concerns that

00:41:27

the supply won't be enough

00:41:30

right and you can see

00:41:30

lithium shows up in the

00:41:32



far left of this graph

00:41:33

where the light blue shirt

00:41:35

is the portion of the

00:41:36

demand related to renewable energy

00:41:39

inside with lithium Czarface it

00:41:42

in the top of that

00:41:43

chart even though it's on

00:41:44

the far left, but I

00:41:45

think it's also interesting about

00:41:46

the things you like copper

00:41:49

and aluminum have a significant

00:41:52

portion of demand that's coming

00:41:54

from the renewable sector. And

00:41:56



so when we go back

00:41:57

to International arbitration, we think

00:42:00

well 25% of arbitrations related

00:42:05

to extracted but this is

00:42:07

a whole new sources of

00:42:08

disputes write these are This

00:42:11

is new Supply coming online.

00:42:13

And it adds to what

00:42:16

I consider kind of the

00:42:17

historic basis for for disputes

00:42:22

right in a in the

00:42:25

extractive industry things like commodity

00:42:28

price volatility write the prices

00:42:31



of your metals like gold

00:42:33

and copper have always sworn

00:42:36

quite dramatically. I was just

00:42:37

looking at it before this

00:42:39

and just thinking about how

00:42:42

Our industry are lawyers and

00:42:44

Consultants would act if you

00:42:48

know our prices are fees

00:42:50

Swan as much as some

00:42:52

of these Commodities, right so

00:42:53

copper was just over \$2

00:42:56

in 2020 and then it

00:42:58

more than doubled by 2021

00:43:00



and then it was down

00:43:01

25% in 2022 and then

00:43:04

up 30% in 2023 when

00:43:06

you can imagine what that

00:43:07

does to to an industry.

00:43:10

Think about what that would

00:43:11

do to our own work,

00:43:13

right? It creates a lot

00:43:14

of instability and a lot

00:43:16

of Behavioral Distortion that's part

00:43:19

of why I received a

00:43:20

lot of disputes coming out

00:43:22

of extractors. Regulatory risk and

00:43:24



government interventions have always been

00:43:26

part of the extractive industries

00:43:28

a typical mine takes about

00:43:30

10 to 15 years to

00:43:31

develop that's a long period

00:43:33

of exposure to potentially multiple

00:43:36

different political parties are regimes

00:43:38

in countries and in so

00:43:41

there's a lot of a

00:43:42

lot of exposure to risk

00:43:44

of that. Environmental and social

00:43:47

considerations. I personally haven't been

00:43:49

involved in a case yet

00:43:50



where there hasn't been some

00:43:52

environmental or social considerations as

00:43:55

part of the case in

00:43:57

the end the dispute and

00:43:58

of course risk and capital.

00:43:59

These projects are the poster

00:44:05

child for wrist, right? They

00:44:08

have the price volatility. I

00:44:10

talked about but significant upfront

00:44:11

Capital expenditures and a very

00:44:13

long life in order to

00:44:15

recover that a capital expenditure.

00:44:16

So the profile makes them

00:44:19



almost perfect for international disputes.

00:44:24

Thank you so much cat

00:44:25

and how would you describe

00:44:27

some key takeaways with respect

00:44:29

to the impacts of the

00:44:30

energy transition on critical minerals

00:44:32

and base Metals startled by

00:44:36

what agreement talking about now,

00:44:39

there's definitely an increase in

00:44:40

the amount of minerals that

00:44:43

are coming online and being

00:44:46

necessary to drive a lot

00:44:49

of the renewable energies in

00:44:50



the technologies that we're going

00:44:51

to need to actually decrease

00:44:53

the level of carbon emissions

00:44:54

in the future going back

00:44:57

to some of the things

00:44:58

that you talked about the

00:44:59

very beginning as well as

00:45:00

some of the Investments 300

00:45:02

billion last year 2020 with

00:45:05

the majority of that coming

00:45:06

from developed countries or developing

00:45:08

countries. A lot of these

00:45:10

minerals are actually in areas

00:45:12



where the countries are developing

00:45:14

countries. So you've got the

00:45:15

elements that were talking about

00:45:17

here. You got the gross

00:45:18

you got the necessary of

00:45:19

new materials and then you've

00:45:21

also got them being in

00:45:22

countries that are still developing

00:45:24

all these minerals aren't necessary

00:45:28

just for electric vehicles, but

00:45:30

it's been obviously wanted to

00:45:31

get drivers as well. We

00:45:33

talked about some Bill letters

00:45:35



and storage even with turbines

00:45:37

will not take carbonara the

00:45:40

copper. So there's been a

00:45:42

huge demands in those areas,

00:45:43

but the amount of lithium

00:45:46

has increased significantly in from

00:45:50

this patch. You can see

00:45:51

that countries like the us

00:45:53

but all around are determining

00:45:56

what are the critical minerals

00:45:57

that they need for their

00:45:59

economy and also then class

00:46:01

find them for National Security

00:46:02



issues. So the US came

00:46:04

out with 50 new minerals

00:46:05

that they defined as critical

00:46:07

in 2022 and they base

00:46:10

it on. What is the

00:46:12

importance for their energy security

00:46:14

and also then the supply

00:46:16

risk and you can see

00:46:17

that at the top right

00:46:19

corner in the red is

00:46:20

that lithium which was mentioning?

00:46:24

It has the most important

00:46:26

and it also has a

00:46:29



large Supply risk because a

00:46:31

lot of the lithium comes

00:46:32

from lifting triangle down in

00:46:34

Latin America love it's clearly

00:46:37

still under development and coming

00:46:40

from those areas. There's a

00:46:42

high importance but then similar

00:46:45

to I think some other

00:46:46

issues said you paid her

00:46:47

to some hotels and we

00:46:49

talked about here is the

00:46:50

list price volatility is for

00:46:51

those spikes. So the lithium

00:46:53



price is similar to some

00:46:54

of the copper but maybe

00:46:55

to a higher degree had

00:46:57

spiked Jail recently purchase a

00:47:00

battery electric vehicle batteries, as

00:47:03

I think I'm down in

00:47:04

price is significantly same thing

00:47:05

with solar panels for the

00:47:06

last decade the cost have

00:47:09

actually gone down significantly, but

00:47:11

there are increases in specific

00:47:13

materials that are created by

00:47:15

some of these shocks and

00:47:17



additional government incentives that were

00:47:21

put in in 2020 21

00:47:23

22 Alex accelerated some of

00:47:25

the roads in the lithium

00:47:26

areas, but then the back

00:47:28

she obviously decline that shock

00:47:30

has been creating ripples throughout

00:47:33

then the market where there's

00:47:35

not as much investment going

00:47:36

into that was discussed at

00:47:39

10 to 15 years, but

00:47:41

it's not just about those

00:47:42

rare earth metals. It's also

00:47:44



about some of the other

00:47:45

areas and it's in that

00:47:46

copper base is one of

00:47:48

the bigger areas that will

00:47:50

highlight the price fluctuation because

00:47:54

people haven't figured out exactly

00:47:55

how the technology will be

00:47:57

used. Now. Sometimes they're coming

00:47:59

out with situations where copper

00:48:00

is very heavy heavy metal

00:48:01

lithium is lighter. So can

00:48:03

we use more lithium and

00:48:04

less copper and some of

00:48:05



the batteries it actually then

00:48:06

increases and decreases some of

00:48:08

those Supply shifts that are

00:48:10

needed to the Future and

00:48:11

some of the development and

00:48:12

impacting some of these needs

00:48:14

but going back to some

00:48:15

of the issues or talking

00:48:16

about 18 million tons of

00:48:18

new minerals that are going

00:48:21

to be needed by 2030.

00:48:23

So just adding on to

00:48:26

some of the comments you

00:48:27



I was there to find

00:48:28

out nothing but the copper

00:48:29

increases as well most amount

00:48:33

of copper is actually currently

00:48:34

being mined in a chili.

00:48:36

That's not to say that

00:48:37

but they have again a

00:48:42

large supply of lithium there

00:48:43

one of the lift in

00:48:45

triangles and then also have

00:48:47

massive amounts of copper. So

00:48:48

the mines that are actually

00:48:50

in operation in Chile are

00:48:52



very important and copper was

00:48:55

added to the Strategic minerals

00:48:57

to the United States in

00:48:58

their 2022 list of the

00:49:00

50 top that they need.

00:49:03

This is a graft of

00:49:07

created by CRA which reports

00:49:09

on a Latin American reports

00:49:12

on the amounts of copper

00:49:15

in cases based on the

00:49:17

prices. So we're talking about

00:49:18

some of the price fluctuations

00:49:19

some of the things that

00:49:20



create disputes. I'm you can

00:49:22

kind of see here that

00:49:23

there is some correlation and

00:49:25

went a perfect but you

00:49:26

know, you got some serious

00:49:27

issue where these are in

00:49:29

constant dollars not nominal dollars

00:49:32

for the price values. So

00:49:34

you going back to all

00:49:35

the way back to 1999

00:49:36

where when the price spikes

00:49:39

of certain minerals such as

00:49:41

copper you see a high

00:49:42



level of the disputes. So

00:49:45

I think you're as we're

00:49:47

seeing these additional minerals that

00:49:48

are being mined additional Supply

00:49:51

shocks because of reductions in

00:49:54

export restrictions that just happened

00:49:58

recently won the minerals that

00:49:59

was listed in that first

00:50:01

fly with a car's is

00:50:02

a graph Graphite graphite is

00:50:05

not a very expensive mineral

00:50:06

but it's one of the

00:50:07

largest component is that they

00:50:09



use an electric vehicle batteries

00:50:10

and soon after the United

00:50:12

States restrict the amount of

00:50:14

Technology chips that can be

00:50:16

exported to China China imposed

00:50:18

restrictions on the amount of

00:50:20

battery quality graph. I think

00:50:22

I should be exported. So

00:50:24

you've seen some of those

00:50:25

issues that are already starting

00:50:26

to creep in going back

00:50:28

to some of the lithium

00:50:29

issues. This is just showing

00:50:30



that it's actually already started

00:50:31

you have the number of

00:50:32

cases that are starting up

00:50:34

in the lithium dispute area

00:50:36

are only going to increase

00:50:38

I've only had a couple

00:50:41

shear and the first one

00:50:42

is in chili the Simcoe

00:50:43

verse the Republic of chili

00:50:44

hasn't been found yet the

00:50:46

front and it now this

00:50:47

is related to basically the

00:50:49

rights to a minor concession

00:50:52



the Democratic Republic of Congo

00:50:54

the sand mining versus PvZ.

00:50:58

This is a long long-running

00:51:01

dispute with 6 parallel. He

00:51:03

says and it's around the

00:51:06

actual ownership because the ownership

00:51:08

of some of these structures

00:51:09

are very very complicated. So

00:51:10

you got a rights issue.

00:51:13

You got a an ownership

00:51:16

issue and the last issue

00:51:18

with ginger versus lipco. It's

00:51:22

a Chinese based company. That's

00:51:23



fine arbitration in connection to

00:51:25

an optic agreement. So you've

00:51:27

got now a contract issue

00:51:30

basically on some of these

00:51:31

cases so you've got issues

00:51:32

across all spectrums of the

00:51:34

legal areas that are ripe

00:51:36

for dispute resolutions. Great. Thank

00:51:41

you so much Ken Jose.

00:51:43

Do you have anything to

00:51:44

add here? And I'd like

00:51:48

to go back to Alicia

00:51:50

outside ESG because again, it

00:51:56



seems to me that this

00:51:57

is an area where the

00:52:00

problem is perceived as being

00:52:04

considered for quite a while

00:52:05

since I'd have to be

00:52:09

made or mines that produces

00:52:14

gold and that produce copper

00:52:15

in Latin America. And Africa

00:52:17

vs. PSG is not is

00:52:21

not new or he's not

00:52:23

interested to is a rare

00:52:28

materials. I needed to remind

00:52:30

to to for the renewal

00:52:33



project. The way those were

00:52:35

treated in the past was

00:52:38

the people talks about a

00:52:39

special license and they tried

00:52:41

to model that by either

00:52:43

increasing the cost or By

00:52:47

increasing the cost of equity

00:52:49

and does the wac. And

00:52:52

that's the way they would

00:52:53

try to retrieve or pray

00:52:54

this issue into the actual

00:52:57

violation of the damage what

00:53:03

I think he's is different

00:53:04



in these are renewable cases

00:53:06

and it's connected to one

00:53:08

one of the issues that

00:53:09

was talked about before is

00:53:11

this notion of legitimate expectations

00:53:13

and the same way one

00:53:17

could argue that maybe 20

00:53:20

years ago. It wasn't obvious

00:53:22

that The Sovereign would change

00:53:29

its regulatory framework to take

00:53:34

into account. Whatever would have

00:53:36

what's happening in the country,

00:53:38

but now after 20 years

00:53:40



experience as a safety investor

00:53:44

today. Incorporate that into way

00:53:47

he calculates its profitability expectations

00:53:58

changing through time and consideration

00:54:01

with respect to BSG that

00:54:03

may not have been very

00:54:04

prominent 20 years ago are

00:54:06

considering portnow articulating the new

00:54:09

both area and that has

00:54:12

something directly to do with

00:54:13

the way we estimate damage

00:54:16

doing it we go back

00:54:18

to the notion that using

00:54:22



the DCF message to estimate

00:54:27

may not be as appropriate

00:54:29

as using the notion of

00:54:33

a U-turn and turn over

00:54:35

to return song. Attributable to

00:54:48

the attractions to some specific

00:54:51

characteristics of the renewable sector.

00:54:56

Perfect. Thank you so much

00:54:57

Jose. I'm tired. You have

00:54:59

anything to say to close

00:55:00

out this topic the critical

00:55:09

mineral Industries all the elements

00:55:11

of a future disputes. I

00:55:13



think I think we all

00:55:15
see that and in fact,

00:55:16
I think it's already happening

00:55:18
just one example comes to

00:55:21
mind Mexico to steps to

00:55:23
initialize lithium sector not too

00:55:26
long ago. They're already are

00:55:27
cases against Mexico in holding

00:55:29
with um, I think this

00:55:31
is just an example of

00:55:33
what to expect in the

00:55:34
future. On Kansas point of

00:55:37
graphite that I think it's

00:55:39



actually a very interesting thing

00:55:41

that might be specific to

00:55:42

critical minerals in a way

00:55:45

and that is that some

00:55:46

countries might be using their

00:55:50

natural resources of critical minerals

00:55:53

as a foreign policy to

00:55:55

and that's Example of China

00:55:57

in particular where I send

00:55:58

my transcripts the United States

00:56:00

has restricted export of artificial

00:56:04

intelligence chips with China and

00:56:07

put in the China announced

00:56:09



export controls on grass height

00:56:11
of which it is the

00:56:12
largest producer reportedly be going

00:56:20
into FX tomorrow. So we'll

00:56:23
see what impact that has

00:56:25
on the supply of graphite

00:56:28
to the United States, but

00:56:29
that's an important element in

00:56:31
the mix. You saw the

00:56:33
picture with the car. I

00:56:35
have a 66.3 mg of

00:56:37
what goes into a graphite

00:56:39
so I think it will

00:56:41



be one interesting future. I

00:56:43

expect to see whether investors

00:56:45

will end up being called

00:56:48

caught in the middle of

00:56:50

this Dynamic of states. Environmental

00:57:05

and social of governance send

00:57:08

Insurance definitely today is going

00:57:10

to be the clear issue

00:57:11

send me stasis and will

00:57:13

continue to have to be

00:57:16

to be the case. So

00:57:18

I think again for for

00:57:20

investors from the forward-looking perspective,

00:57:25



we will see something similar

00:57:27

as we might expect in

00:57:29

the renewable energy space that

00:57:32

is that investors will look

00:57:34

very hard at that existing

00:57:36

treaties. Think about how they

00:57:39

do smack male evolve and

00:57:41

structure themselves in a way

00:57:42

that they were looking for

00:57:44

Fiction's not only has three

00:57:46

this existed today, but also

00:57:48

that with respect to what

00:57:49

might happen in the future.

00:57:50



So for example, if you

00:57:51

see that, you know, what

00:57:54

particular country is 3 Thinking

00:57:56

gets investment treated program and

00:57:58

thinking about putting that back.

00:58:00

You wouldn't want to look

00:58:01

be protected only by the

00:58:04

country's investment to take this

00:58:06

obviously will be looking for

00:58:07

other place restaurant. Make a

00:58:16

new engine. Better back to

00:58:19

you. Okay, so just to

00:58:23

introduce the topic by way

00:58:25



of background. What is geoengineering.

00:58:27

It refers to large scale

00:58:31

scale of manipulation of the

00:58:33

Earth's natural systems to counter

00:58:37

climate change and thinks Guam

00:58:44

is solar radiation management and

00:58:48

that involves reflecting some of

00:58:50

the solar radiation back into

00:58:52

space as a way to

00:58:53

control climate change. The second

00:58:58

is the removal of carbon

00:59:00

dioxide from the atmosphere and

00:59:03

either storing it over with

00:59:05



using it. Carbon capture and

00:59:10

the therapist weather modification now

00:59:14

as the large-scale and Standalone

00:59:17

basis, which is what you've

00:59:19

always understood mostly run by

00:59:22

the term geoengineering. None of

00:59:26

these things are really happening

00:59:28

today. They are at the

00:59:30

state scientific research and that's

00:59:34

research points to significant risks

00:59:39

of today. So we don't

00:59:41

need the discussion that we

00:59:43

will be having a sum

00:59:44



of thirty or ethical in

00:59:46

that the geoengineering in the

00:59:47

true sense of the world

00:59:49

really is not happening today

00:59:50

at the Sketcher already under

00:59:54

way as an attachments to

00:59:58

existing existing industrial processes and

01:00:03

power generation. And so for

01:00:06

example. According to the International

01:00:08

Energy agency there already are

01:00:12

about 40 existing operating carbon

01:00:15

capture facilities attached to various

01:00:17

industrial plant and processes around

01:00:20



the world today. And this

01:00:22

is a booming area. There

01:00:24

are literally hundreds of again

01:00:27

more than 500 according to

01:00:29

the agency pro tricks that

01:00:31

are being developed right now

01:00:33

or being planned for Cardinals

01:00:35

catcher. So this this is

01:00:37

a new industry that is

01:00:38

coming up with keeping an

01:00:40

eye on floor and we

01:00:44

shall see whether it involves

01:00:47

along the lines of what

01:00:48



we've seen for example of

01:00:50

variable power generation International framework

01:00:57

related to geoengineering there really

01:01:01

isn't any multilateral treaty machine

01:01:05

at this point that would

01:01:06

address Engineering specifically or expressly

01:01:10

do some commentators have observed

01:01:15

that your engineering actually might

01:01:17

even compatible with existing local.

01:01:20

I throw environmental treaties such

01:01:22

as the UN framework convention

01:01:23

on climate change and the

01:01:25

Paris agreement and that is

01:01:28



because geoengineering might create incentives

01:01:31
against reducing emissions. So will

01:01:34
you look so pretty a

01:01:36
when it comes to carbon

01:01:37
capture. Although it doesn't remove

01:01:39
carbon dioxide or carbon dioxide

01:01:41
from the atmosphere according to

01:01:43
those commentators. It might create

01:01:45
an incentive against reducing conditions

01:01:48
and therefore ultimately defeat the

01:01:53
purpose of climate's Target. And

01:01:57
if you are interested in

01:01:59
getting worried about this sign

01:02:02



some paper published an opinion

01:02:03

on this, I found online

01:02:07

if you Google it. It's

01:02:09

an interesting vacations under human

01:02:16

rights instruments with respect to

01:02:19

China during during this is

01:02:20

another area where that there

01:02:22

would be tension government has

01:02:33

released the White House report

01:02:36

on June 30th of this

01:02:37

year addressing specifically solar radiation

01:02:41

management and it says that

01:02:44

we're asking United States government

01:02:47



of this point does not

01:02:49

have plans to conduct a

01:02:51

comprehensive research of solar radiation

01:02:53

management techniques, you know, if

01:02:57

this might be developed in

01:03:00

the future and the record

01:03:01

goes through the pros and

01:03:02

cons of the various ways

01:03:03

that is that Solar radiation

01:03:09

modification might be in research

01:03:11

and develop so it's very

01:03:12

interesting to to see that

01:03:15

to the US government is

01:03:16



focusing specifically on this do

01:03:19

European commission for its art

01:03:21

issued a statement around the

01:03:24

same time June 28th of

01:03:26

this year in which is

01:03:28

sad that it does not

01:03:29

consider geoengineering to be the

01:03:31

solution to climate change because

01:03:35

it does not address the

01:03:36

real problem and that is

01:03:39

the increase of global greenhouse

01:03:41

gas. And if so what

01:03:47

lessons can we draw from

01:03:49



from the discussion we had

01:03:52

about renewable energy and Mining

01:03:55

faces for geoengineering get the

01:03:59

dogs go for work. So

01:04:01

I'm thinking if we get

01:04:04

States actually move forward with

01:04:06

GPO engine. Drink and do

01:04:09

it in a similar way

01:04:10

as they did for me

01:04:11

all those who think that

01:04:12

they sent this or regulatory

01:04:15

regimes that the receipts to

01:04:16

bring private investment into this

01:04:19



area and Lady. Maybe there

01:04:25

is a sentence for provide

01:04:36

us with carbon capture passivity.

01:04:38

Is that sort of thing

01:04:38

then I think we have

01:04:41

a similar Dynamic that it

01:04:43

was found at the beginning

01:04:44

of your profits ultimately depend

01:04:47

on what the government gives

01:04:48

you. It's a very long-term

01:04:50

investment. And so again, this

01:04:53

would be a certain area

01:04:56

for a investor-state dispute another

01:05:00



possibility might be that Activities

01:05:07

mean encourage your engineering go

01:05:09

wrong and call Sagar nursing

01:05:11

bags. Let's say in an

01:05:13

area of the state that

01:05:14

has permitted them or that

01:05:17

has carried them out. And

01:05:20

so one can Envision for

01:05:22

example of scenario where a

01:05:24

solar management measures implemented. It

01:05:31

is very effective at what

01:05:33

it what it does at

01:05:34

the same time as it

01:05:35



reduces the solar irradiation of

01:05:38

solar power plants that exist

01:05:40

in that country's territory and

01:05:43

investors in those plans might

01:05:47

have the earthquake in less

01:05:48

than 3 declaring claims against

01:05:50

the government for allowing something

01:05:52

that has led to a

01:05:54

reduction of the efficiency of

01:05:55

solar panels. It's already beginning

01:06:09

to with respect to carbon

01:06:10

capture those investors. I think

01:06:12

will be well advised to

01:06:14



consider themselves. Okay, thank you.

01:06:20

Thank you so much better.

01:06:21

I think that we may

01:06:23

have time for one or

01:06:26

two quick questions from the

01:06:27

audience if anyone has questions.