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TRANSCRIPT
Energy 360

“Just Transitions: Focusing on South Africa and India”

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FEATURING
Chandra Bushan
Founder, CEO, iFOREST

Jesse Burton
Senior Associate, E3G, University of Capetown

CSIS EXPERTS
Lisa Hyland
Associate Director, Energy Education and Public Programming, Energy Security and Climate Change Program, CSIS

Sandeep Pai
Senior Associate (Non-resident), Energy Security and Climate Change Program, CSIS



Jesse Burton: Someone has to coordinate all the action and I think that's really the main goal for government here. And someone has to hold just transition as the key principle or the organizing principle for all of the policies that are put in place.

Lisa Hyland: Hello, and welcome to Energy 360, the podcast from the Energy Security and Climate Change Program from CSIS. I'm your host, Lisa Hyland. This episode is part of our Just Transition Initiative, a partnership of CSIS and the Climate Investment Funds. Together, we just released a new study on how coal phase outs in South Africa and India can be a just transition and for those coal dependent communities. We encourage you to check it out. There's a link in our bio.

And this week, my colleague and lead author on that study, Sandeep Pai, talks with two experts very familiar with the changes in these two countries, Chandra Bhushan, President and CEO of iForest, and Jesse Burton with the University of Cape Town and a senior associate with E3G. Together, they look just transitions in the context of the upcoming COP26 agenda, and then turn to the status of coal transitions in South Africa and India. I'll turn it over to Sandeep now to kick off this important discussion.

Sandeep Pai: Chandra Bhushan and Jesse, very welcome to Energy 360 podcast. I'm really excited to talk to two of my very favorite people in the field, so I'm really keen to ask you a lot of questions about COP, coal, and just transitions. So let's get started.

My first question is to Chandra Bhushan. You have extensively participated in many COPs, what are some of the key issues that policymakers around the world are going to discuss in this COP in Glasgow? And what are some of the key areas for India to focus on in the current COP?

Chandra Bhushan: Thank you, Sandeep. And my pleasure to be on this podcast with you and Jesse. My first COP was in 2009, before that I never used to go to these big climate conferences, but I went in 2009 for the first time and then attended many more COPs.

Now, what is quite clear to me that the host governments always try to get some big thing out of COP. They try to get big headlines. I'm not sure whether they get big things done, but they certainly try to get big headlines. And I do see Glasgow also as a big headline COP on net zero, and UK and US, as well as Europeans, are very keen that COP26 is a net zero COP. They also want some statement on coal part, that there should be an end to coal part.

From that perspective, I think COP26 headline is to be net zero, coal, and

some announcement on finance. That's the bargain that developed countries and developing countries are doing right now. As far as India is concerned, I think there is a genuine concern within the country that developed countries are pushing this entire process too fast. That's what India's concern is. And I do respect that concern. I also think there are different things that we can do at COP26, but I do respect it simply because US is coming to this COP with very low credibility. With Trump administration's behavior on climate change, for example, they walked out of the Paris Agreement, the withdrawal of US from Afghanistan and what has happened in Afghanistan. So the US is coming to this COP with very, very low credibility and also less trust factor. Now, how do you expect countries to suddenly start trusting US just because one president has gone, another has come back, that Trump has gone and suddenly US has become good guys with Biden? I don't think geopolitics is that simple.

Somehow Europeans are trying to wash away this entire issue of low trust, low credibility, disagreement between developed and developing countries, and they want to show that everyone is together, it is hunky-dory again, we are friends. So for me, I'm not expecting, frankly speaking, and I would like to be wrong, but let me just say that I am not expecting this COP to be more than a big headline COP. Things will go back to normal after this COP, and maybe we'll start waiting for the next COP, because the groundwork is not ready for an ambitious action in all the countries across the world on climate change, including net zero, coal, and finance. So that's what my take is.

Sandeep Pai: That's great. Moving on to Jesse. What are some of the South Africa's priorities at COP26?

Jesse Burton: Hi, Sandeep. Thanks so much for having me today. So I guess there's two key areas that South Africa will be looking at. So the first one is actually outside of the formal negotiations where people might be familiar with the fact that there've been discussions between South Africa and some climate invoice from developed countries around a country deal or some sort of package for ESCOM, ESCOM is our state owned enterprise, the monopoly utility, so that's the one element. And then inside the formal negotiations, I think one of the most critical points for progress, and I agree here, is going to be around finance.

We know that developed countries have not met their Copenhagen commitments of 100 billion US per year, but even so I think South Africa's expecting that there'll be deliberations around a new longterm goal on finance. Our Minister of Environment has proposed a figure of 750 billion per year. Others have suggested 1.3 trillion between adaptation and mitigation. But I think a lack of progress on finance is going to be a real sticking point.

On markets in article six, South Africa's going to be looking to conclude a

robust system that'll guarantee environmental integrity, including review of international cooperative approaches, living of a share of proceeds on cooperative approaches, and a sustainable development mechanism to fund adaptation.

On both adaptation and loss and damage, I think South Africa would be expecting meaningful discussions on a global goal, looking to establish an agenda item adaptation and full recognition of the necessity to meaningfully include loss and damage in all the elements of the Paris framework.

Then finally on transparency, South Africa would be looking for a robust international system, including adequate levels of support for developing countries to implement it, as well as agreement on a five year common timeframe.

Sandeep Pai: That's fantastic. Thank you to both of you for laying out the big picture agenda of the COP and very important positions of India and South Africa, two very important countries going into the COP.

But let's move on to the topic that we all really discuss and talk about, which is coal phase out and just transition. So, I mean, one of the things that Chandra Bhushan you just pointed out is that UK Prime Minister Boris Johnson and COP President Alok Sharma, they're really keen to see some kind of agreement of COP. And then big ask is for OECD countries to phase out coal power by 2030 and for non OECD countries to phase out coal by 2040.

What do you think India's stand on this coal phase out issue is, and what are some of the key barriers that a country like India faces in committing to a coal phase out?

Chandra Bhushan: Let me answer it in two ways, Sandeep. First is that we need to look at this issue separately. What I mean to say is when you bring international climate politics and domestic coal issue together, the issue gets muddled, so it is important to look at international negotiations separately and what India can do on coal domestically separately, then we are likely to get better answer on this issue.

Let me first say about international negotiations. It is easy for OECD to phase out coal, and I'll tell you the reason. First of all, coal is not a significant part of OECD's energy basket, coal part, other than Poland, very few countries have even 10% or 15% of their electricity coming from coal. UK has virtually phased out coal and therefore for OECD it is not a big problem as far as energy contribution from coal is concerned.

OECD coal power plants are also very old. They are 40, 50 years old. They

should have been phased out long back. In fact, there are only few plants which are less than 10 years old, but as far as I remember, the vintage is quite old as far as OECD is concerned, so they all are depreciated plant. It is not going to cost OECD much to close down those plant, other than the issue of workers, of course, for which Europeans have come out with Powering Past Coal Alliance and Coal Regions in Transition in EU for just transition.

But frankly speaking, it is a straightforward, painless process code and code compared to other countries where coal is big. In our case, 70% of electricity is coal. In China that number is more than 50%. If you look at the big countries. In case of Indonesia, it is similar to what India is. So for countries where coal is the center of electricity supply, it is difficult. Therefore joining the phase out [inaudible 00:09:33] of OECD with developing countries, doesn't seem very nice to me.

I would like, for example, that when you are talking about phase out of coal, you should start talking about phase out of other fossil fuels as well. Then it is apple to apple comparison. Gas is no good, and now it is very clearly established that the world is talking about methane problem, and for 20 years, timeframe, gas is as bad as coal if your methane emission is about 3%. Just 3% leakage of methane from well to burner makes methane as bad on climate issues as coal.

Therefore for OECD gas is going to be challenging, as coal is going, be challenging to us. So at international level, both these things will have to be understood. I would like to discuss phase out of all fossil fuel plants, electricity plants, internationally, and then ask OECD countries, what is your timeframe for that phase out, and then look at other developing coal dependent economy, what is your timeframe is? Otherwise, you are picking and choosing right now. You are saying coal is bad, but you are saying gas is good. Unfortunately, that is not true. That's what, at the international level, my argument would be. Let's talk about phase out of all fossil fuels.

Domestically, I am much more bullish on India. I think domestically it makes sense for India to start phasing out coal much more faster than what people are asking us to do. And therefore, I started by saying we must disconnect between international negotiations and what we are going to do domestically, because when you put both of them together, you get into this trouble of comparison and other issues. So domestically, I am bullish, I think with the falling cost of renewable energy, with the kind of pollution that is happening from coal, the climate issues, I would like coal power in India to peak before 2030, and maybe phase out between 2040 and 2050. That is the timeframe. It is a realistic timeframe. We will be able to transition the economies that I will propose.

Sandeep Pai:

That's great. Moving on to South Africa, another very coal dependent

economy. Jesse, so do you think these timelines of 2030 for OECD and 20 for a country like South Africa would be realistic, and would South Africa accept that? And what is their stand on this issue and what are some of the barriers?

Jesse Burton:

Thanks, Sandeep. So I think it's an interesting idea that we should disconnect the international from the domestic. I mean, I think it's helpful for getting diplomatic and geopolitical trends to go in a direction to have these kinds of symbolic dates, but I think we should also be cautious about applying global models to particular context. And so I think it's a really interesting idea that in India you might be thinking about going faster because also there are a whole lot of local environmental impacts that should be considered. It's very similar in South Africa.

Two things. I think in South Africa our domestic politics are such that we're not at a place where we could commit to a 2040 phase out internationally yet. Part of this is that OECD countries are not showing the necessary action. So I agree, even though they're coal plants are old and it's relatively cheap, and in fact, in many places you could already save money by closing coal earlier, for example, in the US and the EU, OECD countries are not going fast enough, I want to say, especially Germany and the USA, and so that drives some of the, I don't want to say intransigence, but some of the caution in South Africa.

Interestingly, a lot of local analysis done by in-country teams here has also shown that coal phase out around 2040 is consistent with our own domestic pathways towards Paris consistent futures. So, in fact, anyway, I think South Africa should be looking at a 2040 coal power phase out, but that's based on energy systems and just transition thinking in the country. Currently 2040 is not in any official plan, so I think it would be very hard for South Africa to agree to that internationally.

I think it's also very important when we start to talk about these dates to look at the cost. There are clear benefits. I mean, there are benefits to regions like Mpumalanga that have incredibly bad air pollution, some of the worst air pollution in the world, environmental degradation, all these things are impacting livelihoods, but there are also very serious costs. South Africa gets more than 70% of their primary energy from coal and 86% of coal power. So India, Indonesia, China, also very coal dependent, but I think nowhere comes close to South Africa in terms of dependency in the power system on coal.

If we move from a current policy scenario to a 2040 phase out, that has implications for workers in the coal mining sector, for example, and that happens in two ways. So at the moment, what happens is that a lot of workers tend to drop out of coal mining quite young. It's a very understudied area, but we think it's because people are very ill or they too sick to work and so there's a lot of new entrants entering the coal mining sector all the time.

So as you start to phase our coal, all of these new jobs that would've been created in the region disappear, unless you have an economic diversification strategy.

And then on top of that, if you move from the current policy pathway to something more rapid, you also go from about 3000 to about 25,000 forced job losses between now and 2040. That doesn't sound like a lot, but in a place like Mpumalanga, you have 45% unemployment so every single job is really, really important.

On top of that, there are costs associated with the foster of a lot of renewable energy, so you need supportive finance. You need a plan around developing the necessary transmission infrastructures. South Africa faces huge transmission infrastructure constraints at the moment. Rhe best renewable resource regions we can't evacuate any power from, and ESCOM, our state owned utility, is also in a financial crisis, which really puts a lot of this at risk.

At the same time, there are a lot of promising signals around coal phase out in general. We've got a soft commitment to net zero in our longterm strategy. ESCOM have themselves committed to net zero by 2050. We've seen a lot of banks start to look at fossil fuel exclusions, especially around coal power, which is of course the easiest one. And it's very clear new coal power in South Africa is not financable and I can't see any new plants being built here, and would be very costly.

As a country, we've just submitted an updated NDC and the low range of that NDC, which is getting close to 1.5 degree compatible, it just pips in, means that if you did build more coal, it would actually become even more costly to meet that. So it would cost you about \$7 billion in that system, if you built more coal, and so making an ambitious target more costly and difficult to meet doesn't really make any sense.

At the same time, there's a live just transition debate in the country, both at national, provincial, and local government levels, as well as in civil society and in organized labor. So I see a lot of progression around the thinking about what needs to be done to manage this kind of commitment.

Sandeep Pai:

That's great. I'm glad, Jesse, you brought the topic of just transition because that's something I'm going to ask next. So this year we did a report on looking at just transition in Jharkhand and Mpumalanga. But starting with Chandra Bhushan, in the context of all that is happening nationally and internationally, at COP and elsewhere, and all the talk about coal phase out, what should be key priorities on the ground in coal dependent regions, such as Jharkhand with regards to just transition?

Chandra
Bhushan:

Sandeep, let me start by saying that Jharkhand is a very complicated case. Jharkhand currently, it has the largest reserve, but it is not the largest producer of coal. It has the oldest coal mines and coal fields, but coal production has actually shifted out of Jharkhand to bigger mines in Orissa, Chhattisgarh, Madhya Pradesh, and Maharashtra.

One, Jharkhand has old coal mines. The mines are exhausted. The quality of coal is going down. As well as the governance in Jharkhand is one of the weakest in India. So last few months I have been thinking about it that should we be looking at just transition in Jharkhand first, or should we be looking at just transition issue in other states where the issues are not complicated?

One of the thing that I am thinking about is, how do we move on this entire issue of just transition? Should we look at the path of least resistance and start developing confidence that it can be done? Or should we head on take the toughest issue, Jharkhand for example, and start experimenting with that? So this dilemma is in my head right now.

The first point is, where do we start this entire process of coal transition and just transition in India? Should it be from Jharkhand? Should it be from other state? That's point number one. This is one of the big issues on ground. Where do you start?

The second issue is that it is now quite clear, and I have said it in the last meeting that we both worked together, that other than people who are formally employed in coal companies, either contract worker or informal worker or coal pickers, who will be about 80-90% of all people making a living out of coal, they are not interested in coal. They do coal mining or depend on coal mining simply because there are no options. If you provide them skills they will gladly leave coal. Therefore, on the ground, the issue has to be from now onwards start looking at what we have called as five R, the five Rs of just transition. Start looking at, how do we redo the economy? How do we diversify the economy? That's one.

Because unless and until you are providing them alternatives, they're not going to leave coal. They will resist even the closer of mines. So how do you start diversifying the economy, restructuring the industries? Those will have to start right now, before you say I'm going to close down coal.

Second is start talking about reskilling of workforce and skilling of new workforce. Third is start talking about revenue substitution, because some of these states depend on coal revenue and start talking about investment in just transition from where the money will come, both public and private source.

Then there is a genuine concern in these areas that you might close coal

mines, but you will bring industries who will be as environmentally and socially harmful as coal mine. So start putting in place a new compact on social and environmental responsibility.

These are the kind of things we will have to start doing right now, start planning right now, start engaging with communities right now. Right now the discussion on just transition in India is within think tanks and union ministries. It's no good, frankly speaking. We have not even scratched the surface of what will be the actual requirement.

What I am telling you is theoretical. When I go on the ground and start discussing diversification of economy, then I will understand what I have to do, when I start engaging with political actors there. So lot of things that is happening right now in just transition space. And you know something very well, there's a very new area, exciting area, but lot of work needs to be done. So these are some of the issues that are in our head. We are still grappling with the challenge it is.

As I said, in my head just transition is a developmental issue. It is not a climate issue. Just transition is about development. How do we redevelop coal communities, coal bearing areas, so that they can gladly leave coal? This is what just transition is.

Sandeep Pai: That's great. I really like that just is a development issue. Moving on to Jesse. You have done so much work on Mpumalanga, but when we think about the big picture in the scope, we are talking about coal phase out, but what are some of the key priorities for a just transition in a region like Mpumalanga, which is so coal dependent for jobs and everything else?

Jesse Burton: For those who unfamiliar with Mpumalanga, more than 80% of South Africa's coal is mined there in about a 100 kilometer radius region. Almost all of our power plants, our coal to liquid plant, and more than 80% of the mines are in one place, so there are these incredible levels of concentration and lack of economic diversification.

I just want to say Chandra, yes, just transition is about broader development, and I think there's a lot of emphasis on workers, for example, but what we see in Mpumalanga, in fact in the whole of South Africa, is that you have youth unemployment that is almost 70%, so really you need an entirely new development pathway.

For me, looking at coal, that's the first and biggest and most immediate and pressing challenge, but it's going to be much bigger than coal, it's going to be about manufacturing and the automotive sector and the liquid fuels value chain and buildings, and something much bigger than just coal. But coal is my thing, so we'll talk about that now.

These incredible levels of concentration mean that you've got towns, like Emalahleni, which means place of coal, where 44% of that town's GDP comes from coal mining and 25% of employment is in coal mining. And there's a very real concern that as you phase out coal, if this happens without a plan or whatever, that people's livelihoods are just going to be destroyed, that you're going to send people back into dire poverty if they lose their jobs. And beyond that, that there's all these secondary impacts. Women who sell food at the entrances to mines, women and children who are picking coal for subsistence, men who are picking coal for small scale commerce and tracking. There's all of these network built around coal and not all of it is that well understood.

But I want to say, I mean, some of the other challenges are, of course I mentioned it earlier, but extensive environmental damage. So the Olifants catchment, which is the main catchment area that is in the coal mining region, is the most polluted river catchment in the country. There's already very large service delivery and governance challenges. People feel excluded, as they often do in resource extracting spaces. I've mentioned high levels of poverty and unemployment.

We need a transition anyway for people in the region that addresses unemployment, that especially also needs to look at youth and women. And I see different elements to this. Social dialogue is very important, so the ILO definition says, workers, employers, and government, but of course, also communities, as integral here in civil society have been active on the ground for many years here, working with communities and local activists around their rights, around environmental justice, developing what is called here an open agenda on just transition, so really trying to surface what it is that communities themselves want out of this.

We need worker planning. So although we see workers dropping out of the workforce quite young, as I mentioned, if you're going to have an accelerated transition there will be forced job losses. So you need to think a lot about how do you redeploy? Can you redeploy workers? Can you pay early retirement? I think there needs to be some attention paid to health and those kinds of elements.

And then what you really need is a bigger economic diversification strategy for the region, and this could take all sorts of ways, but we need to start looking in quite a lot of detail, what does a green industrial plan for the region look like? ESCOM are looking at power plant repurposing and new renewables in the region. Can you put synchronous condensers in old coal plants? Can you use the existing transmission infrastructure, which is very close to load?

South Africa is looking at about 20 gigawatts of renewables over the next decade and, in fact, if we want to attain the more ambitious end of our NDC, we basically need to double that. So there's a lot of opportunity for localizing renewable and energy manufacturing, so people are thinking, can we locate this in a coal region as one pillar of a just transition?

But also for me, it's much more than just energy, Mpumalanga has some of the best agricultural land, so thinking about how to develop the agri processing sector, other kinds of manufacturing, because you've got quite a skilled workforce. Obviously the closure of mines, which up until now has been not managed very well, so there's lots of issues around acid mine drainage into graded land, but there's a lot of opportunities. So can you develop a working for mine rehabilitation program? Can we look at the value chain opportunities through bio fiber economies, putting crops on degraded mining land that help to also regenerate the soil?

Then there's been some work looking at what you can actually turn that all into. So what can you do with hemp? Can you develop it all the way down the line into other kinds of high value products? And I think as more and more people are getting involved in this, and there are, I think, by my count about 25 just transition research programs in South Africa, a lot of this kind of innovation and imaginative ideas will start to come to the fore.

Where I see a huge gap is really also around energy poverty, which is completely ignored. So there are a lot of households who depend on coal domestically, either because they can't afford electricity or because they're not connected, and that has huge health implications that are not being addressed, and that isn't really featuring in a lot of the discussions yet and I think it's a real area of oversight.

Sandeep Pai: That's great. Thank you both for laying out the understanding of the big picture and also many interesting details about just transition in these two places.

Let's focus on the role of governments. Let's start with Jesse this time and let's focus the role of governments and state owned companies like ESCOM, who you said are trying to diversify their business. So what kind of role can governments and state owned enterprises like ESCOM play in facilitating a just transition for coal dependent communities?

Jesse Burton: It's been fascinating to watch ESCOM's transition from a coal heavy utility into one of the drivers of just energy transitioners, which is what they term it. They set up a Just Energy Transition Project Office who's looking at repowering and repurposing, they've commissioned studies on the closure of all of the coal plants, and they've committed, tentatively at least, to net zero.

So they're kind of driving this. I mean, their commitment is to net zero with the sustainable increase in job creation.

I think part of this is that they are in financial problems, so they're also looking at how to survive, but they've always had an interesting role where they've had a developmental mandate around, for example, energy access that they've kind of embrace at different times in their history.

What I think is really amazing about this is that actually it's easier to manage these kind of complicated transition if you have an ESCOM, and I think I'd be really interested in your guys' views on where the Coal India Limited maybe can play a similar role in India. Because for me, one of the big challenges around coordination, and here you have a company that can manage that internally, at least for power plants.

In South Africa most of the jobs are actually in mining, but I don't see any immediate way of coordinating worker transition, like redeploying workers who are still young and still able to work between 100 different privately owned minds. That's really complicated.

Government has a key role to play here, but it also depends at the level you're at. So some of the municipalities, for example, aren't engaged in these kind of international debates around just transition and climate, they're trying to deliver services all the time and they see a lot of risks around service delivery, a lot of the taxes disappearing and those kinds of issues.

But someone has to coordinate all the action, and I think that's really the main goal for government here. And someone has to hold just transition as the key principle or the organizing principle for all of the other policies that are put in place.

I think sometimes when the politics are not lined up yet, and I think we've seen that here a little bit, there's a lot of contradictions and the Energy Ministry has been a little bit more conservative around coal phase out than other parts of government. We haven't got agreement on the pathway yet, and so that makes the planning much, much harder at a national level.

In the region, government already sees all the impacts of coal and so they're much more alive to the fact that you need systems to be put in place now to start thinking about economic diversification, which is exactly what the province has done. So they've created something called the Green Economy Cluster Agency, which is going to look at agriculture, water, and energy opportunities in the region. And they're also thinking and talking about how the provincial government can run ongoing stakeholder and have an ongoing stakeholder grouping around climate policy and just transition that will coordinate and discuss and debate and have the kind of social dialect part of

this on the ground.

Sandeep Pai: That's great. I mean, Coal India would be a very interesting case and I would be very curious to hear Chandra Bhushan's view on that. So the same question to you, what kind of role can national, local, and state governments, along with coal companies, play in facilitating a just transition for coal regions?

Chandra Bhushan: India is a little more complicated than South Africa in a way that our thermal power plants are owned lot more companies, including public and private. NDPC of course is a government own large coal power company, but two third of the coal power capacity, if I'm not wrong, is now with private sector. So there is a clear difference in private and public ownership. Coal mine, 80% is Coal India.

While I think it is an advantage that your large coal mining is with one company and it is under the government and government direction can work, it is also a danger because there is a lot of politicization that can happen. The political interference, the interference of other departments of the government in Coal India is quite well established.

Coal India is not as independent and autonomous as it is made out to be. At one point of time, it had, if I'm not wrong, it had about \$6 billion of cash reserve and that cash reserve is down to \$1.5 billion, and it has been asked to build toilets, to run schools, to God knows what. So there's both an advantage and a disadvantage of having one company run your entire coal economy.

I think Coal India will perform better on just transition. First of all, let me say that I think there is a lot of capacity building that is required within the Coal India itself to grasp this issue of transition. I think Coal India understands that it is an energy company and not a coal company, it is therefore setting up a solar manufacturing plant, as you know. It has already started the process of doing that. It wants to diversify into other energy sectors, so from business perspective, it has started doing it.

But from transition perspective, and especially just transition perspective, I think Coal India has huge capacity gap, so while it can become a solar company or a hydro company or some other renewable company, Coal India will struggle to close down coal mine in an economically, socially, and environmentally sound manner, if what currently the status is. It's history of coal, mine closure is not that glorious. Coal India has not done very well with mine closure, physical mine closure, leave social and labor and other issues.

I also think that, considering the fact how entrenched the manufacturing sector is with coal economy, transition is not going to be simply limited to coal mining areas, transition will spread out to areas and districts and states

where there are end user of coal, whether it is steel hub of India, or it is similar districts of India, those districts will also get affected.

Of course the primary zone of transition will be coal mining areas, but there will be secondary and tertiary zone of transition that we also have to look at and plan for. So this is broadly what it is. I would like Coal India to have much more research sell within Coal India itself to look at these issues, work with other research organizations, build it capacity on these issues.

We have time, Sandeep. I do not think that this coal transition is going to happen in a decade. Multi-decade processes. This is going to be a multi-decade process. Two decade at least, so we have time. It's not that things are going to happen tomorrow. And I'm quite optimistic that if everyone comes together and works together, we will be able to do this.

Sandeep Pai: Can I just ask you to say sentences about the role of state and national governments?

Chandra Bhushan: Frankly speaking, national government has to provide a national framework. A national framework is required because, how do you decide which coal mine closes first? I mean to say, should a coal mine in Orissa close first, or Jharkhand close first? So there has to be a national framework to decide this.

Also resource. Central government has money and central government has policy levers, which it can use to attract private funding in these areas, including tax rebate, which union government in India has used very widely to bring development in economically backward areas by giving tax incentives to private sector to go and invest there.

Both central government has to put the national framework on just transition, state government has to put the state plan on just transition, because in the state also you have to decide which district will go first and what will be the criteria of doing this, which is going to be difficult one where you need what kind of investment. So a state plan, and then a district annual, short term, medium term, and longterm plan, which would be implementation plan.

I have one major concern that I must tell you. My major concern is at the district level, that at the local level we have not built capacity for transition, especially in coal mining areas. There are no good institutions who can handhold district administration. The district administration, as you know, in India any case is run by one person, the district magistrate, which a very British system, unfortunately, but that's the truth. And so one man army is not going to make this transition happen. We will have to think a little bit more in terms of how district level plan will be implemented.

Sandeep Pai: Jesse, you have some reaction to Chandra's point, I think.

Jesse Burton: I just wanted to jump in and say, I think that we've seen that almost all companies in the world have struggled to close mines well, so this isn't just a uniquely Indian problem, this is a problem in South Africa. Even the best rehabilitation happening here leaves you with land that is, at best, got two thirds of its former yield if you want to grow crops. For example.

Then I just wanted to also add, it's very sexy at the moment now to talk about coal retirement mechanisms, and a lot of it is very heavily focused on plants, but for me, mining is actually the key space here. How do you take resources and close them early, perhaps? I mean, it's hard enough to close mines on a planned timescale, they're often under capitalized for rehabilitation. Now you're asking, or telling, companies that you're going to lose out on some years of revenue that you actually need for good environmental and social closure processes.

But mining is where most of the jobs are, at least in South Africa. It's where the livelihood impacts are going to happen. So thinking about innovative ways of looking at the coal mining problem, I think is absolutely the most important part of this.

Then I want to add, this is definitely a multi-decade issue. For us in South Africa, we've got to start to build out renewables at such a fast rate, 10 times what we've been doing over the last few years. But at the same time, we are already starting to close some coal plants that are very old. They were closed in the 90s and brought back on, they're ancient, you can't get parts of them anymore, kind of thing. So we are starting already to look at pilot projects.

There are four very old ones that are immediately being closed, like right now in the next few years, where ESCOM really needs to think about how to repower and repurpose them. But doing that lets you build out the institutions and capacities to do this in a much bigger and faster way later on.

Here in South Africa, we've got a closure of plants, probably six this decade, and some associated mines, but then you get to the 2030s and you're looking at closing 20 or 25 gigawatts of coal over 10 years. I know the numbers are small if you're from India and you've got 225 gigawatts, but we only have 45 gigawatts, so you're closing half your fleet in a decade, and that's a very complicated question, and on top of that, you have all the mining.

But building out now and learning how we go through the, I love the five Rs as well, learning how to do these things, is what we have to focus on now, I think, in the short term, and build that capacity in institutions, be it Coal India Limited or local government or new institutions that are being set up specifically to manage this.

Sandeep Pai: That's great. I think we covered a lot of ground about just transition and coal, but let's close the loop going back to COP. So one of the things is, given it's very, very clear that there's urgency and pressure on India to move away from coal, how can the international community support a just transition away from coal in a place like India? Let's start with Chandra Bhushan first.

Chandra Bhushan: There has to be, and I have written about it, Sandeep, that we have to start building an international corporation on just transition, because just transition is about development. And we have had international corporation on development, so it's not that we are talking something new. We have decades of experience on international corporation and development, which is called as ODA, Overseas Development Assistance.

I view just transition framework at the international level as some variant of ODA, Overseas Development Assistance, to rebuild, redevelop these areas who are going to economically and socially suffer because of closure of these mines. So in my head, it is clear that it has to be a development assistance program. 90% of money comes from domestic sources, it's only about 10%, which comes from outside. But that 10% attracts international capital and funding and other things. So one is ODA.

The second is, how do we bring international capital into these areas where lot of policy reforms we will required in countries like India itself in terms of just transition funding?

These are the two pillars that I see, ODA as well as attracting international capital for transition. And the third pillar is going to be capacity. How do we build capacity within India to deliver? You can have all the money you want, but if you don't have capacity, how are you going to spend that money? So get capacity.

Building technology is not a problem in my head. If you have money, you can buy all the technology that you want in the world, so that's not a big issue. So this is what broadly an international framework. We are doing a paper which we will be releasing in the second week of COP, on international framework on just transition, so I've just given you a peek review of that international framework report that we are coming out with.

Sandeep Pai: Exciting. And I'm looking forward to that report. But let's ask Jesse, before we close, the same question. Given the urgency and pressure on South Africa to move away from coal, how can the international community support a just transition in the country?

Jesse Burton: I think the key thing is really around finance. So besides the overall issues on international financial support for climate change in general. Overall it's too

little. It's not necessarily the right quality. It's hard to access. South Africa is classified a middle income country, not a poor one, so we really struggle to access the bulk of donor funds.

The solution to this is we've got to make a really strong case for crowding and international finance and donors. We need a lot of nuance around how we're going to put together those finance packages, looking at different sectors. So there's a social justice component, there's a power sector component, but also looking at new sectors, how to rebuild this new development pathway.

One of the challenges is that this can't happen purely on commercial finance. I think we really need real grant money around the social justice elements. So there's a lot of technical assistance and that's very important and that's very necessary. It builds institutions. It builds capabilities. It helps with studies and data collection, and that. But it's not enough. I would like to see donor countries really stepping up. We need an order of magnitude more grant equivalent support for the just transition explicitly, and I don't see that forthcoming.

I can see partly this is an issue of the pathway. If we don't know how fast you have to go, you don't know how much you need necessarily, but we've also seen that a tiny percentage of the climate finance that we've received so far, which is about US dollars, two billion, only a tiny percentage of that has been grants.

A second issues around the financial ecosystem, but that's a more general problem, it's about how to match the way finance works in South Africa to the kinds of projects that would be most successful at social and environmental justice. So I hope that we are really going to stand up and demand a very large package of support if we are going to be asked to go faster, given the kind of levels of inequality and poverty in the country.

Sandeep Pai: That's really great. And thank you so much. This has been such a great conversation. As always, I learn a lot talking to both of you. So thank you again for your time.

Lisa Hyland: Thanks again to Chandra Bhushan and Jesse Burton for joining us this week. You can find a link to the report, Understanding Just Transitions in Coal Dependent Communities, in our bio and on our website, justtransitioninitiative.org.

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