



UK PACT

**Just energy transition:
Exploring global mitigation
measures in a local context**

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Delivering a fair energy transition requires defining, understanding and addressing vulnerabilities and opportunities for regions and communities in individual countries.

Energy transition needs fairness

With over two-thirds of human greenhouse gas emissions energy related, energy transition is at the heart of climate action. The combustion of fossil fuels particularly coal, for electricity and heat is the largest individual source, representing 25 per cent of global greenhouse gas emissions (IPPC, 2014).

Most industrialised countries have started to wean themselves off coal. Emerging economies, however still rely heavily on coal combustion to fuel economic growth and activity. A key initiative of the UK's COP26 presidency is thus to curb unabated coal-fired power plants, "Accelerating the transition from coal to clean power."

While the technologies –wind and solar are available, the transition of current social, economic, political and industrial systems towards sustainable energy solutions requires more than technology.

The necessity of the energy transition is widely accepted. The question is how and on what terms it is delivered. As with all social and technological changes, some countries, regions and communities will be severely negatively impacted, whilst others might benefit. This is the case for climate change impacts, but just as much for the actions needed to prevent climate warming.

Energy transition thus is a question of Energy Justice, i.e. a transition that treats those affected equitably and fairly. The vulnerabilities and impacts for regions and communities in individual countries need to be understood, addressed and mitigated to deliver a just energy transition. Otherwise, adversely affected communities are likely to resist these changes, stalling a timely transition.

Supporting solutions

UK PACT (Partnering for Accelerated Climate Transitions) is a flagship programme under the UK's International Climate Finance (ICF) portfolio. The UK is committed to tackling climate change and is investing £11.6bn via ICF over the five years to March 2026. UK PACT was established in 2018 with £70m funding for an initial three-year period. In September 2021, the UK Prime Minister announced £200m of new funding for UK PACT to continue its delivery and grow as a programme over the next four years to March 2026.

UK PACT supports countries to overcome barriers to clean growth and accelerate their climate change mitigation efforts. This brief highlights five projects funded through the UK PACT Country Programmes initiative - three in South Africa, two in Colombia. Here we discuss their motivations, challenges and solutions regarding energy justice.

The key message

The pivotal message arising from the five projects of focus, more broadly, is that energy justice is one piece of a larger jigsaw of social and economic conditions. Energy transition itself is an opportunity to make progress towards fairer, more inclusive conditions of energy generation and use. The reflections of those engaged, passionate and vivid dialogues help reveal the meaning of the global energy transition for local communities and development.

The five projects discussed below illustrate the following important themes:

1. **Coal mining and generation is a critical junction for the energy transition.** Policy and investment decisions should mitigate detrimental social issues and will determine how other challenges will be addressed.

3. South Africa provides a potential blueprint for a just energy transition in emerging economies currently relying on coal, as it will be one of the first to decarbonise its electricity generation. **Solutions identified here have the potential to be replicated and scaled in other countries.**
4. **UK PACT projects enable the collaboration of local/regional/national stakeholders to identify justice pinch points.** Jobs are not only about livelihoods but also form identities, which need to be reframed through tangible energy transition jobs. This takes time and community engagement.
5. Medium and long term impacts include an established platform to communicate local needs for regional and national energy policy planning, and increased capacity of communities to receive energy transition

funding. **Successful technology transfer and technical assistance examples are more targeted financial instruments and network integration of smart meters.**



Photo: Wind turbine Station. By Johann van Dalen.

Just energy transition: The South African blueprint

The South African projects of focus in this brief address the formidable challenge communities face in the coal-rich Mpumalanga Province in the east of South Africa. With over 80 per cent of South Africa's coal production in over 86 coal mines and the location of large coal-fired power stations, the region relies considerably on coal mining and generation, with little alternative activity. The 2019 pre-COVID unemployment was above 40 per cent, among the highest in South Africa. Youth unemployment in the region is even higher.

Distilling the just energy transition in South Africa

The UK PACT - funded project 'Distilling the just energy transition in South Africa', led by Gaylor Montmasson-Claire from the Trade and Industrial Project Strategies (TIPS) research institute, has established a unique dialogue with grassroots community initiatives, the mining labour union representatives and policymakers.

The project seeks to give the often-marginalised communities a voice and a platform to define and respond to the opportunities and challenges around just transition.

What has been assumed to be a single stance from the community, has turned out to be a multitude of opinions for and against the phasing-out of coal.

The project pairs established community activism with economic evidence to inform the on-going

work of South Africa's presidential climate commission. What appears to be a simple proposition, to create new and better jobs for the ones that will be lost, runs much deeper for the individuals and families that have been mining for

generations. Working conditions may be arduous and pose a risk to life, but being a 'miner' is an identity. From the workers' perspectives the energy transition becomes a threatening identity crisis, unless concerns are heard, identities are valued and proposed opportunities are tangible and within reach.

The project mediates the opposing views, listening to all parties and communicating the concerns and demands. By engaging with such discussions, each party is admittedly out of their comfort zone. Analysts are facing passionate communities instead of economic forecasts, whilst community leaders are being presented with uncomfortable energy transition pathways. However, all sides are united in the common goal to improve livelihoods on the

ground. Establishing a dialogue between conflicting views is crucial to incorporate justice in energy transition planning and implementation.



Photo: Duvha power station at Middleburg coal mine in Mpumalanga, South Africa. By Melanie Lamprecht

The project aims to provide a platform to include local stakeholders in the regional and national debate on energy justice. It achieves this by equipping local municipalities with information to create tangible alternative job opportunities, softening the transition away from coal. South Africa and the world are watching, as South Africa is a blueprint to how a just energy transition might be handled.

The electricity sector is one of the cheapest decarbonisation targets. It is tempting to make this about technology, but it is also about individual livelihoods, communities, and identity. Respect, understanding and fairness should be the guiding principles. Being heard and recognised is the first step to ensuring that local voices are represented at the national level.



Photo: Consultations near Mpumalanga coal mines. Joelle Chesselet/Trade and Industrial Policy Strategies (TIPS)

A finance roadmap for a just transition in South Africa

Sandy Lowitt is an industrial economist with experience in strategic economic development. She has advised on initiatives such as the Gautrain commuter rail system. She leads the 'Just transition Finance Road Map' project at TIPS which explores prioritising and funding social impact projects in South Africa. Sandy is driven by her conviction for social improvement and fairness and sees green growth as an opportunity not to be missed.

The focus of the primary place-based research is the Mpumalanga province in eastern South Africa. Twenty-six social impact projects have been identified and mapped to prioritise potential funding mechanisms.

The review process comprised two parts: an investment component which identified the key project characteristics from a commercial, economic and financing perspective; and a social component which covered issues related to participative, distributive and restorative justice. Projects at all stages of development were considered as long as they met the basic requirements of having a dedicated project developer or champion who was resourced to develop the project further and had access to at least some preliminary funding to undertake initial development.

Plotting the projects within the framework of cost and social impact resulted in clear clusters of projects. One cluster of projects displays relatively low social ambition and relatively high investment cost (> ZAR 150million). These projects tend to be technology-driven and have no associated or defined social agenda. Despite this, these types of project have potential to be financed through existing financial instruments. The projects are generally specific investment projects for new technologies or power generation. The companies involved have been accused of 'justice washing' due to the relatively little social impact associated with these large investment projects.

Another cluster of projects show low or medium investment cost, but high ambitions on the just transition scale range. The low-cost projects in the range of ZAR 1 million-20 million are often community-led projects that do not have the skills or capacity to absorb large new enterprises and investment. These projects seek to establish small

enterprises and pilot stage initiatives that the private sector does not fund. Conventional Due Diligence cost is often prohibitive given the value of the projects. They are deemed not fundable, and grants are often not available either.

Lowitt describes the medium price projects, which have high social ambition, as unicorn projects. This cluster of projects equally poses a challenge for the current financial system. The identified projects often bundle several initiatives involving parties without track records. Whilst there has been interest from investors, there is no process to enable these projects, yet. In essence, financial instruments and projects need to adapt to be able to consider and implement community projects with the largest possible social benefits. To uplift communities impacted by the energy transition it will not be sufficient to fund projects with a social benefit, but it should be the projects with the highest social benefits.

The current analysis shows that some categories of projects will be funded within the current financial ecosystem; some categories of projects will require adaptation and innovation within the existing ecosystem; and for the most transformative and high-ambition projects innovation will be required.

“The most ambitious just energy transition projects need specific financial mechanisms to catalyse their substantial social rewards.”
- **Sandy Lowitt**, Trade and Industrial Policy Strategies

The project team proposes a system level-change of the financing and investment instruments and processes to be able to fund those projects. The project has identified the needs and requirements for financial instruments and investment areas to increase socially ambitious projects for Mpumalanga and South Africa. They are helping bridge the financial gap by connecting high impact projects with investors.

The role of renewable energy in the just energy transition

In a third UK PACT project in South Africa, led by Green Cape, Mike Mulcahy pursues the geographical cluster theory to support Mpumalanga’s role in the transition to a more green economy. The project’s focus is on creating skills and capacity for local authorities to benefit from the energy transition, creating jobs in their communities. Acknowledging that there is no pre-formed consensus, the team engages community and grassroots stakeholders who have varied perspectives on the proposed energy transition, what it means, and how it should be addressed

The notion that 'coal is bad' disenfranchises many in the region due to the strong mining identity and catastrophically high unemployment. Arguably, it will not be sufficient to replace jobs like-for-like, instead there needs to be a greater number and diversification of job opportunities.

Mike sees the real impact of climate change on the ground, ranging from severe water stress to the agricultural practice of shade nets to protect fruits. The project seeks to channel the energy Transition efforts towards job creation and economic growth. Jobs will need to be accessible, understandable and relatable to the existing workforce in Mpumalanga.

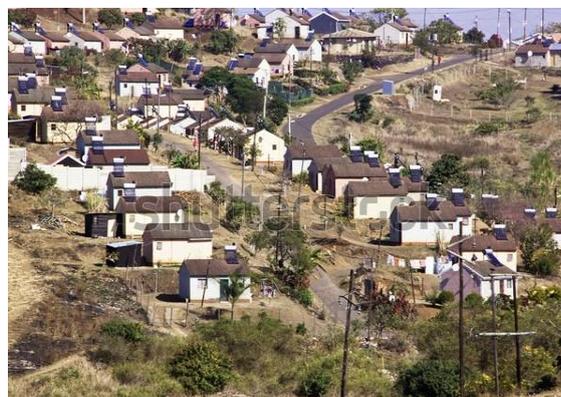


Photo: Low cost township houses fitted with solar panels in South Africa.
By Icswar

Scalable clever electricity for Colombia

Despite official electrification rates of 99.8 per cent, an estimated two million people have no grid access in Colombia. The main areas without grid access are located in the Amazon, Orinocco and Pacific coast regions South East of Colombia. The challenge lies both in the electrification of the rural communities and stabilising and enhancing the existing grid infrastructure

Smart grid technology transfer

The Carbon Trust is leading a project to support the roll-out of smart grid technologies in Colombia. Mauricio Riveros and Daniel Perdomo have been working on integrating smart meters in the UK for many years. The challenge for this project is to utilise and adapt the UK experience and knowledge to develop a roadmap and the capacity to implement smart meters in Colombia. They are developing a diploma on smart grids and detailed evidence of smart meter benefits to the grid operators.



Photo: Traditional wooden house with solar panel in the mountains of Columbia. By Luis Echeverri Urrea.

The short-term success is a compelling case study of companies and business models around smart meters. Estimates for the benefit of smart meters suggest that the overall system cost can be reduced by as much as USD 700 million per year if the electricity generation is decarbonised before 2030.

The cost benefit analysis for smart meters has been used as evidence in Colombian Congress to approve the smart meter legislation. Regarding energy justice, it remains to be seen how the system savings are reinvested to yield social benefits.

Further steps in this technology transfer project are to assess the data of 200,000 installed smart meters to quantify the benefits of the smart meter installations. Energy theft is a country-wide issue, but smart meters will allow operators to locate where theft occurs. Poorer communities could receive more targeted support to alleviate energy poverty.

The technical assistance provided contributes to international justice, transferring best practices and knowledge on smart grids to the country-specific context of Colombia. The approach holds large scalability potential in neighbouring South American countries, such as Colombia, (Peru, Chile and Uruguay, for instance).

Smart meters can reduce the overall system cost by USD 700 million per year. This technical assistance contributes to international justice, transferring best practices and knowledge into the country-specific context.

Scaling up rural electrification via capacity building

Ferruccio Santetti is the Investment Lead for Latin America and the Caribbean at the Global Green Growth Institute and leads a project to improve difficult to reach rural electrification projects. He has personal insights into the realities of many disadvantaged rural communities worldwide and is now striving to make a difference in his home country.

The project approach is noteworthy as it seeks to equip the public and private stakeholders in rural communities with the skills and know-how to apply for available funding schemes. The nature of the rural communities and having no or only expensive off-grid energy access will naturally give them a priority for funding if their applications meet the required thresholds.

These rural communities are unlikely to access finance to meet their specific energy access needs without support. The training and funding application assistance will enable local governments to access financial resources.

Peripheral areas, such as communities in the Amazon, still have the hallmark of the state being absent and practically being controlled by the FARC (Revolutionary Armed Forces of Colombia) for the last decades. Despite a peace agreement between the Colombian government and FARC in 2016, these communities are still affected by isolation and lack of support and infrastructure (Rettberg, 2020).

One example is Inírida, the capital city of Guainía in Eastern Colombia, with around 30,000 inhabitants. Many indigenous people live in this community, which is only accessible through boat or plane. Electricity is generated mainly by old diesel generators, which pose a health hazard to the community but are also unreliable and expensive to run, limiting opportunities for equitable access to energy.

Most rural electrification in Colombia is publicly funded but administered at national level, often neglecting regions with the highest needs. Without support, these rural communities are unlikely to be able to access any funds. The UK PACT project aims to train officials in Inírida and elsewhere in Colombia to be in a position to make successful funding

applications. The project offers online and offline training workshops and application support and will make the training programme available online to be scaled to other communities in Colombia.

The longer-term ambition is to reduce the reliance on public funding through increased private investment that follows the first trailblazing public investments.

Key recommendations

UK PACT project partners are helping communities to make their voices heard during a time of important decision-making. UK PACT's work also supports the efforts to collaboratively shape the evidence for energy Transition projects and pathways that maximise social benefits. The following best practices emerge from the portfolio:

1. Projects have been designed by communities and organisations within partner countries.

This change in perspective, towards the needs and demands of emerging and developing economies is important to identify the actions and technologies best suited for the local context. Jobs are not only about livelihoods but also form identities, which need to be reframed through tangible energy Transition jobs. This takes time and community engagement.

2. The focus projects all have approaches, ideas and solutions that can be scaled within their countries of operation and across boundaries.

The global energy Transition requires global commitment and tangible, impactful funding. The proposed solutions recognise and consider the local context and impact for communities and individuals to find and maintain the momentum needed for accelerated climate action.

3. Funding, technology, and knowledge transfer all have a role to play in enabling a just energy Transition.

The projects have identified that a combination of measures are required to support energy justice. Funding and, importantly, innovation within the existing financial ecosystem to increase access to finance is critical, and technology transfer offers important opportunities to support the Transition. Moreover, skills development and knowledge transfer that create employment and empower locally owned solutions is an important dimension in the roadmap to a just energy transition



Given the high existing unemployment rate, a deliberate focus on jobs and investment provides a pragmatic lens to bring green economy stakeholders towards consensus.”

– *Michael Mulcahy*, Green Cape

Photo: Power stations in Mpumalanga, South Africa. Joelle Chesselet/Tra de and Industrial Policy Strategies (TIPS)



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