Just Energy Transition in Coal Regions
Knowledge Hub

Wuppertal Institut

Renewable Energy Benefit Sharing

From social license to shared value

June 2026
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IKI JET and its JET-CR Platform aim to support and accelerate just energy transitions away from coal to renewable energies and other sustainable economic activities in Colombia, Chile, South Africa, Indonesia, Vietnam, Thailand, and Mongolia.

The Just Energy Transition in Coal Regions (JET-CR) Knowledge Hub is an online platform building bridges between experts, policymakers, coal industry, trade unions and civil society organizations. It's a space to bring together different perspectives, share real stories and search for effective tools and solutions.

It aims to particularly amplify the voices of workers and communities dependent on coal showing how knowledge can work in practice. It also turns practice into knowledge by bringing local experience into global conversations and advancing just energy transition expertise.

Providing regular digests of articles, research papers, news stories and events it serves as a "one-stop shop" for collecting up to date information related to just energy transitions away from coal around the world.

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The Wuppertal Institute for Climate, Environment, Energy (WI), founded in 1991, is one of Europe's leading sustainability think tanks and focuses on enabling transformation processes towards sustainable development at local, regional, national and international levels. Through its transdisciplinary approach, WI develops models, strategies and instruments that assess and initiate technological and social innovations aiming at decoupling the use of natural resources from economic growth. The majority of WI's research projects are highly application-oriented and practice-relevant, comprising dialogue processes with stakeholders from industry, policy and civil society. WI receives basic funding from the German federal state of North Rhine-Westphalia, but third-party funding fund the major part of its projects. Scientists at the Wuppertal Institute conduct 150 to 170 projects each year on behalf of local, regional and national governments, EU institutions, charities, NGOs and companies. The institute employs approximately 300 staff.

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Executive Summary

Coal-dependent regions in Indonesia and around the world face a double challenge: as coal use declines, they lose not only jobs but also a major source of public revenue. At the same time, renewable energy projects often encounter local resistance when communities see turbines and panels but not the benefits. Benefit-sharing is therefore not a secondary issue but a precondition for a just and politically viable energy transition.

This report provides policymakers with a structured overview of the three main mechanisms through which renewable energy projects can share value with host regions. Each mechanism addresses a different part of the challenge:

1. Fiscal mechanisms, such as taxes, royalties or mandatory revenue shares, provide predictable income for local governments. In coal regions, where public budgets depend heavily on royalties, these instruments help stabilise essential services during the transition. They are straightforward to administer but require clear legal frameworks and transparent allocation rules.

2. Community Benefit Schemes and Community Benefit Agreements offer direct, negotiated benefits to affected communities. They can finance local infrastructure, training programmes or social services and are particularly effective at building trust and reducing permitting delays. Their success depends on early engagement, independent support for communities and enforceable commitments.

3. Local ownership models, cooperatives, municipal utilities or shared-equity structures, allow communities to capture recurring income, local jobs and procurement. They generate the strongest long-term economic multipliers but require capital, technical capacity and supportive regulation. Where these capacities are limited, targeted support is essential.

International examples from Colombia, Germany, the United States and Indonesia show how these mechanisms work in practice and what conditions enable them to succeed. The evidence is clear: no single mechanism fits all contexts. Policymakers must match instruments to local needs and to the institutional and social realities of each region.

Across all mechanisms, equity and participation are decisive. Benefit-sharing must reach non-landowning households, women, indigenous peoples and other groups that often bear the

costs of transition but rarely receive its benefits. Inclusive governance, clear beneficiary rules, transparent reporting and safeguards against elite capture are essential to ensure that value-sharing is fair and credible.

For coal mining regions such as those in Indonesia, where renewable energy cannot immediately replace lost coal revenues, the analysis points toward a hybrid pathway. In the immediate term, statutory fiscal minimums can secure municipal budgets and maintain social protection as coal revenues decline. As projects move forward, developer-led community benefit schemes and CBAs should be required, with communities receiving the resources (i.e. funding, legal and technical expertise) needed to negotiate fair terms. Over the long run, regulatory reforms, concessional finance and capacity-building programmes can enable communities to move from passive beneficiaries to active equity partners, capturing a growing share of the economic value created by renewable energy.

The report concludes that embedding benefit-sharing into renewable energy policy is a strategic investment in social stability and long-term regional resilience. When designed well, these mechanisms help communities navigate the economic impacts of coal decline, strengthen acceptance of renewable energy, and ensure that the transition delivers tangible value where it is most needed.

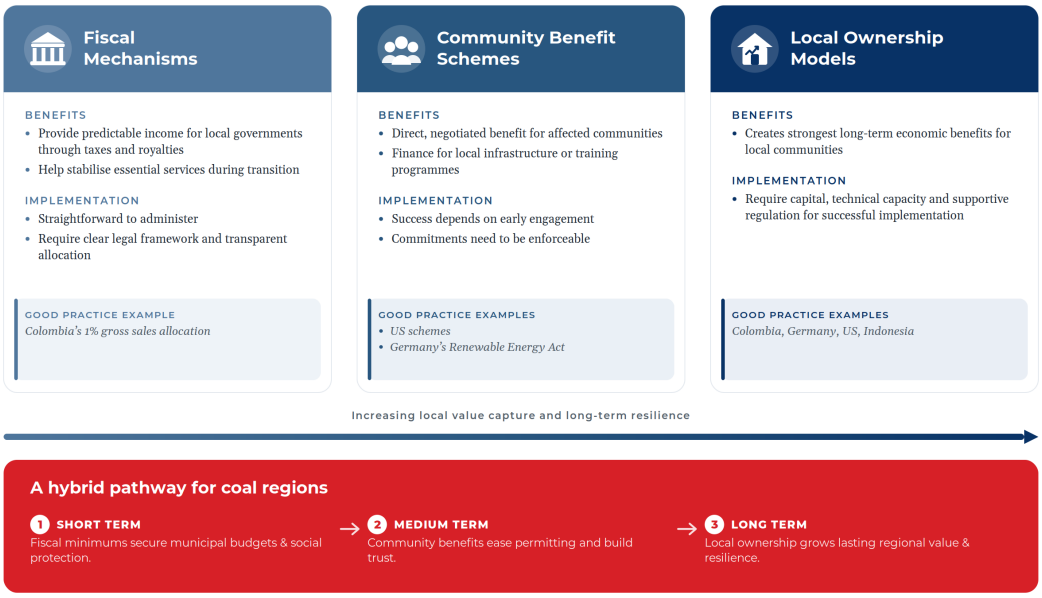

Figure 1: Graphical representation of the executive summary highlighting the different kinds of benefit sharing mechanisms.

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Abbreviations and Acronyms

CBA	Community Benefit Agreement
CBS	Community Benefit Scheme
GDP	Gross Domestic Product
JET	Just Energy Transition
kWp	kilowatt-peak (unit)
MEMR	Ministry of Energy and Mineral Resources (Indonesia)
MW	Megawatt (unit)
MWh	Megawatt-hour (unit)
RE	Renewable Energy
SDGs	Sustainable Development Goals
VAT	Value-added Tax

1. Introduction

The expansion of renewable energy (RE) is a critical component of the global effort to mitigate climate change. The macro-level benefits of RE, such as climate mitigation, job creation, energy independence, air quality or modernization of energy infrastructure are widely understood. Yet, these benefits do not automatically translate into direct, equitable value for the local communities. On a local level, RE also creates negative externalities, such as visual and noise disturbances. Without deliberate interventions, the positive effects of RE can be widely dispersed, while its negative impacts remain concentrated on a smaller group of residents or communities.

If RE replaces fossil infrastructure, local communities also face impacts of economic transformation, such as short-term loss of jobs and identity as well as decreasing revenues. The coal industry, for example, has provided coal regions with significant revenue and many regions grew dependent on those steady incomes. When replacing coal plants or mines with RE, much of the revenues will be lost for those regions. In Indonesia 80% of Coal royalties are allocated to the regions thus creating dependencies for regions of coal revenues. This distribution is guided by regulations stipulating a 16% share for the provincial government, a 32% share for the producing regency, and an additional 32% for neighboring regencies within the same province (Wuppertal Institut 2025).

These examples show that a just energy transition cannot rely on passive community acceptance of RE, but needs to take a proactive and mutually beneficial "shared value" approach. This issue of distributive justice is a central challenge, as neglecting it can lead to community opposition and distrust. Distributive justice is one of three dimensions of justice that are at stake in just transitions (see box 1). The development of formal benefit-sharing schemes is not merely an optional add-on but a necessary mechanism to correct for a market and policy failure that can concentrate the burdens of infrastructure on certain communities while dispersing the benefits to a much wider, often national, audience. By establishing formal mechanisms for benefit sharing, RE projects can bridge the gap between its broad societal value and its specific local impact, fostering a more just and sustainable energy transition. This paper introduces some of the mechanisms for benefit sharing and provides global examples of their design, implementation and results. When we look at global RE deployment, we see an increasing body of mechanisms which enable local stakeholders to get their share of economic benefits. We categorised these

mechanisms as followed: tax and fiscal measures, local ownership models and Community Benefit Schemes. Each approach influences local cash flows, project economics and public acceptance in different ways. Below we review these models and the evidence on their economic and social effects, drawing on recent studies and international case examples.

Box 1. Three Dimensions of Justice in Just Transitions

1. **Distributive Justice**: The main idea behind distributive justice is to share the costs and benefits of transition in a fair way. Effectively, this focuses on addressing the direct impacts resulting from the transition process. The main questions regarding distributive justice are: 1. Who is responsible for negatively affecting climate change (and accordingly, should pay or take a burden)? And 2., Who should benefit from redistribution and how?
2. **Procedural Justice**: The procedural dimension of justice touches upon questions regarding the fairness of the transition process itself. As a general rule, just transition processes should be as inclusive, transparent and fair as possible. The main idea is that the people affected by changes as well as people affected by harms caused by the industrial activities that are to be transformed should have a say in designing the alternatives. A plurality of perspectives, however, is not only needed to achieve fairer outcomes, but also to legitimise the process itself. A process that is accepted as legitimate reduces the risk that policies get broadly opposed by the society, especially in areas which are fundamentally affecting people's lives.
3. **Recognitional Justice:** At last, it needs to be remembered that inequalities of opportunities already exist in current societies. Due to historically grown social and structural mechanisms, capacities are unevenly distributed, e.g., along gender, social class, or ethnic/racial lines. The inequalities today not only mean different possibilities and starting points for people to participate in the society, they are a systemic risk when an ongoing widening gap between rich and poor and less social mobility erodes the necessary trust in political and economic systems to solve climate change, making the transition less manageable. Recognitional justice therefore means to also work on already existing equity imbalances at the start of the transition, the provision of social services to help people to meet their basic needs like access to clean air & water, health and food, but also supporting affordable homes, childcare & education as well as good working conditions and reskilling possibilities.

Box source: Jenkins et al. 2016

2. Tax and Fiscal Mechanisms

Tax and fiscal mechanisms use the tax and fiscal system to stimulate investment and participation in renewable energy (RE) by mandatory payments. They aim to ensure that local communities share the economic benefits of clean energy development or reduce project costs and attract investors.

2.1. Tax and Royalty Arrangements

These mechanisms ensure that a portion of the financial benefits generated by renewable energy projects flows back to local governments and communities hosting the projects. Generally, a percentage of corporate income tax or VAT collected from a RE utility is transferred to the district government, which uses the funds for schools, roads, and healthcare services among others. These mechanisms provide predictable, long-term income streams for host regions, reduce local opposition to projects, and help ensure communities share in the economic value created by renewable energy.

Such levies directly boost local budgets (for infrastructure, services, etc.) and have been shown to improve acceptance by giving communities a tangible stake. For instance, a social-accounting study of a Shetland wind farm found that paying 50% of profits into local ownership (vs. no local share) multiplied retained income by five times and raised regional GDP by +30.9% vs. +3.0%.

However, mandated tax-sharing requires strong legal and administrative frameworks. Funds must be managed transparently to avoid misuse. Best-practice guidelines emphasize community governance and clear reporting/auditing to minimize corruption risk. When payments are seen as voluntary “gifts” rather than statutory rights, they can even fuel cynicism (viewed as “bribes”). One UK study found that framing payments as a policy requirement (rather than a developer favor) significantly increased local support. A fund should therefore have a clearly defined purpose.

Box 2. Considerations for implementing tax schemes

Defining Policy Objectives: this could be raising sustainable local or national revenues, financing future-proofing of infrastructure such as the electricity grid, ensuring host communities receive direct benefits, or compensation for land use.

Identifying the tax base: what should be taxed? Electricity generated (MWh), capacity (MW installed), revenue from electricity sale, impact-based or fixed royalties to communities.

Evaluating elasticities: this includes an assessment of the sensitivity of developers to tax changes, evaluating competition with neighboring jurisdictions and the rate structure of the tax. Here the revenue needs, competitiveness, tax burden and investor certainty are to be considered.

Determining Allocation of Benefits: who gets the money and how? Through direct payments to communities, through infrastructure grants or allocated for dedicated groups (see 2.2.).

Creating the legal and administrative framework: Transparency, clear auditing, long-term predictable rules and a simple way to comply with the requirements without overboarding bureaucratic burdens are key to ensuring functioning tax systems.

Community Engagement: Early on in the design of the tax scheme, communities should participate meaningfully in the design to align their needs and demands with the proposed tax.

2.2. Colombia's 2019 Law

Since 2019 solar/wind projects > 10 MW have to allocate 1% of gross sales to local communities in the area of influence. Of this 1%, 60% are directed towards indigenous/afro-descendant communities and 40% towards the local municipalities. In a prior informed consultation process communities are identified that would benefit from this mechanism. The share for indigenous or afro-descendant groups is to be placed in a trust fund where the only beneficiaries are the communities. The money is then equally distributed to all the communities in the project coverage area identified in the prior consultation.

The law also defines the purposes for which those funds can be spent: infrastructure, public services, sanitary facilities, potable water or projects that improve the quality of life and wellbeing of the people. 10% can also be allocated to operational costs of these facilities. These rules on spending allow for more transparency and accountability. At the beginning of each year the energy producing company and the communities have to revise and plan the use of the resources inside the trust fund.

The Colombian government answers to demands from indigenous communities and local populations especially in the La Guajira region that is both affected by coal extraction and large-scale wind projects for which communities have neither been consulted nor financially benefited. (Gonzales Posso, Camilo and Joanna Barney 2019)

Box 3. Including marginalized communities in Tax and Fiscal Mechanisms

As Box 1 showed, recognitional justice is one of the three justice dimensions in a Just Energy Transition. Including historically marginalized groups in financial redistribution of Renewable Energy Projects should be considered for multiple reasons. The objective of JET is not limited to decarbonizing the energy system but includes the aforementioned dimensions of justice. Only when considerations about fair and just processes and outcomes are part of the planning process, will communities accept, participate and trust in the transition.

These revenues can also help communities to develop further in accordance with the Sustainable Development Goals (SDGs) and improve their overall livelihood allowing them to participate more meaningfully in society.

3. Community Benefit Schemes

Community benefit schemes are the most common benefit-sharing models, where a private developer initiates and oversees programs. Usually, project developers and the communities agree on services from the developer towards the community. This may include direct financial contributions to the community, infrastructural improvements, employment & training or environmental mitigation. A widely used mechanism, particularly in the UK and Scotland, is the community fund. Developers contribute a lump sum or annual per-megawatt payment to a fund that is then managed by a local organization with community representation. Another form of direct financial benefit comes from land lease payments, royalties, or payments for power line easements - a crucial distinction here is that these benefits are typically concentrated on a small group of landowners who host the project and do not benefit the community as a whole in contrast to the community funds. (Toledano et al. 2023)

These initiatives are often a direct response to community pressure or are implemented as a strategic measure to de-risk a project and secure a social license to operate.

The implementation of community benefit schemes is not without its challenges. The primary barriers include a lack of trust and transparency, limited community capacity to negotiate with developers, and a general lack of awareness about the availability of these schemes.

Box 4. Best practices for CBS implementation

To address these barriers, best practices for implementation have emerged. To overcome the trust deficit, schemes should prioritize early, transparent, and consistent engagement, moving beyond a transactional approach to a more genuine, collaborative process. To address the power imbalance stemming from limited community capacity, developers and funders should provide resources for communities to hire independent technical and legal experts to help them successfully negotiate and draft agreements. Most critically, agreements must include clear, detailed terms with specific and quantifiable goals, as well as robust enforcement mechanisms to ensure accountability. The process should be transparent and allow for public oversight to rebuild trust and ensure the benefits

are delivered as promised.

Box source: Toledo et al. 2023, Moore-Bloom 2024, Moore-Bloom 2025

3.1. Community Benefit Agreements in the US

In the United States, Community Benefits Agreements (CBA) are legally binding, enforceable contracts between a project developer and a community group or municipalities. The agreements direct benefits from a project to local communities. The benefits are negotiated based on a community's priorities. Therefore, communities need sufficient time and adequate resources to negotiate CBAs. As with other benefit sharing mechanisms, CBAs can help increase public acceptance of clean energy projects, increase the chance of gaining permitting approval, cultivate trust between project developers and communities, and generate benefits for host communities.

CBAs should include clear, measurable targets and timelines as well as well-designed enforcement mechanisms which help ensure that commitments are actionable and enforceable. These enforcement mechanisms outlined in a CBA provide the community with a means to hold the developer accountable, and in some cases, to halt construction if commitments are not met.

In particular, it is important to include specific language about benefits, who is responsible for delivering them and by when, as well as important details that may arise in implementing benefits. CBAs have a long history in the United States, helping to secure tangible benefits for local communities from proposed development projects while safeguarding against potential burdens. CBAs are gaining further traction, with some U.S. states and federal agencies, like the Bureau of Ocean Energy Management, incentivizing their use through bidding credits or expedited permitting pathways.

A well-documented process that includes details on the negotiation and community engagement process as well as how the proposed benefits were arrived at can help with accountability, public trust and effective implementation. Having sufficient time and adequate resources can help community members and organizations represent their interests and secure tangible benefits during the negotiation process. Leveraging data and tools to identify and prioritize benefits most

useful to a community — something technical or legal experts can help with — is important to ensure positive outcomes.

Studies have shown that clear, measurable targets and timelines as well as well-designed enforcement mechanisms can help ensure that commitments are actionable and enforceable, and developers can be held accountable. In particular, it is important to include specific language about benefits, who is responsible for delivering them and by when, as well as important details that may arise in implementing benefits.

In some cases there are also Community Workforce Agreements negotiated. These can include commitments to support local businesses in the construction phase, make social investments, create career path opportunities for low-income individuals and even re-hire/re-skill workers who lost their jobs in the fossil fuel industry. (Moore-Bloom 2024)

For more on the issue of labor and reskilling refer to the European Commission's toolkit on Green Skills:

Box 4. Preventing power imbalances in CBAs

Energy companies and local communities are unequal partners with energy companies having much more resources to influence the negotiation of CBAs than communities. Therefore measures need to be undertaken to avoid both unfair processes and unfair outcomes due to the power imbalances. Ideally the negotiation would be led by an independent entity ensuring a fair process. Travel costs to the location of the negotiation should be covered for community representatives and some sort of compensation for the time invested in preparing and attending the negotiations so as to not exclude poor communities from the process. Communities can

also benefit from independent legal assistance in the negotiation and enforcement process.

Box source: Hitch et al. (2025), Rodon et al. (2018).

3.2. Germany's voluntary scheme

Germany's Renewable Energy Act (2021) establishes a possibility for any community hosting a wind farm to receive 0.002€ per kWh produced over the duration of 20 years from windfarm operators. This provides a direct financial link between the project's operation and local government revenue. Thus, motivating some municipalities to actively support the development of more wind energy projects. While these "voluntary schemes" started as simple initiatives, there are now formalized principles and legal provisions which represent a significant policy shift. A purely unsystematic approach to benefit sharing can be dangerous and lead to inconsistent outcomes as governments have recognized. By establishing a recommended value or a specific rate (0.002€/kWh) through law, they create a de-facto industry standard for benefit sharing. Through this, the practice becomes institutionalized and provides a predictable framework for both developers and communities, which can reduce friction and accelerate the deployment of renewable energy projects. Even though the benefit sharing is voluntary, this policy intervention standardizes what constitutes a fair contribution, thereby increasing community acceptance and moving the conversation from the question whether benefits should exist to how they should be delivered.

The specific impact of the intervention in each case depends on a number of factors ranging from the size of the wind park and the size of the community to the economic strength of the municipality and the degree of economic diversification. A larger wind park generates larger benefits and in a smaller or less wealthy municipality those benefits might boost the budget considerably.

4. Local Ownership Models

Local ownership of renewable projects can strongly boost local economic development and social acceptance. Germany's "Bürgerenergie" (citizen energy) movement provides one example for local ownership models (IÖW, 2016). With over 1,700 energy communities, many organized as cooperatives, the movement demonstrates the power of local ownership. These cooperatives, with over 95% of their members being private individuals, are primarily engaged in solar and wind energy production.

In Germany and in other countries, community-financed and locally owned wind energy projects have generated far greater regional economic benefits than externally owned projects. Several case studies indicate that local ownership increases the share of capital and operating expenditures that remain in the host region. This amplifies effects such as local employment, purchases from regional suppliers, or stable tax and dividend income. Quantitative comparisons from U.S. case studies report that community-owned wind projects can produce roughly 2–4 times the regional value-added and higher employment effects compared with corporate-owned projects (Lantz & Tegen, 2009; Kildegaard, 2010). German and European regional studies show that stronger local participation and procurement can substantially raise the proportion of project expenditures that are captured regionally (Fraunhofer ISI, 2018; IÖW, 2016).

Importantly, local ownership also increases acceptance. Recent surveys show that wind and solar schemes owned or part-owned by community cooperatives enjoy significantly higher support than purely corporate-owned projects. Hogan (2024) finds community- or shared-ownership projects fostered greater acceptance because locals feel either fairly involved or fairly rewarded or both. Brouwer et al. (2025) similarly report that Dutch cooperative-led wind farms had shorter planning times and faced far fewer public objections than conventional projects. These effects arise because local investors have a voice (procedural justice) and receive economic benefits (distributional justice), which together neutralize many opposition arguments.

We can distinguish between three types of local ownership schemes. First, community ownership, e.g. by cooperatives, where local actors form a company or cooperative owning and operating the project. Second, public ownership, meaning that a public company owns and operates the project (e.g. in Germany Stadtwerke), which implies that profits benefit the budgets of local administrations directly. Third, shared ownership arrangements in which local private persons or

administrations own shares of the project. In the following, we provide examples of locally owned projects.

4.1. Village Owned Enterprise in Muara Enggelam, Indonesia.

Muara Enggelam is a remote village in the Kalimatan Timur region in Indonesia. Its 192 households are floating on the Melintang Lake which hinders its connection to the national grid. Previously a diesel generator was used for electrification. In 2016, the Ministry of Energy and Mineral Resources (MEMR) provided a Special Allocation Fund of 3.9 billion IDR for the construction of a 35 kilowatt-peak (kWp) communal solar grid and the training of local technicians for the operation of the infrastructure. Four years later, the village-owned enterprise had developed the capacity to repair any damaged solar panels and managed to increase the capacity to 45 kWp. (SEADS 2025)

Furthermore, the costs for electricity have decreased significantly from 80.000 IDR (Diesel) to 50.000 IDR (Solar) a month. The revenues also cross-subsidize operational and maintenance costs without additional funds required from the village budget.

4.2. Energy Communities in Medellin, Colombia

In Colombia a change in energy transition planning took place. Recognizing the effects of centralized mega projects on ecosystems and local livelihood, the government decided to shift its focus on decentralized so-called energy communities. Those energy communities are both a way of electrifying rural regions where energy access is limited or provided only by polluting diesel generators at high costs and of engaging communities in the energy transitions. The first energy community in Colombia was not one in the rural area but in the metropole of Medellin. A group of neighbors in Medellin's El Salvador neighborhood is producing their own energy. Once they satisfy their energy needs they can also sell excess energy on the electricity market which provides the necessary funds for the maintenance of the panels. In the first round of application more than 18.000 communities applied for funding showing the huge interest in community owned energy infrastructure in Colombia.

Box 5. Assuring long-term useability

Once the solar panels are installed and the first kW power light bulbs and refrigerators, congratulations are in order but the work is not over yet. Solar panels and battery storage will at some point complete their life circle or face other problems that require maintenance. To avoid diffusion of responsibility legislators should include not only the set up of energy communities but also maintenance, repair, renewal and the end of such projects. In some cases people have used solar panels as tables as maintaining them was too costly for the community. Local communities could be trained to maintain their infrastructure thus further strengthening communal energy autonomy and local employment.

Foto cortesía de EPM
Calle La Estrecha, barrio El Salvador, Comuna 9, Medellín.

Further reading on energy communities in Colombia:

IKI JET knowledge Hub in general and on colombian energy communities in particular.

5. Gender in Benefit Sharing

Some benefit sharing mechanisms are better suited for advancing a gender-inclusive just transition as others. While more women work in the renewable energy sector than in the fossil industry, gender disbalances still persist.

Community funds and revenue sharing arrangements represent one of the more promising benefit sharing mechanisms for advancing a gender-inclusive just transition, yet their gender outcomes are highly contingent on the governance structures through which they operate. A critical body of literature has demonstrated that where fund governance replicates existing community power structures, women are systematically marginalised from both decision-making and material benefit flows. Research on wind and solar projects documents that men within host communities ultimately receive the majority of benefits due to low levels of female participation in consultations and decision-making, compounded by women's limited formal ownership of land. This dynamic is further entrenched by the design of project documentation: property registration formats typically include only one line, with a sole owner assumed to be the head of household, meaning that leasing contracts generated by project developers similarly exclude women's names. Community funds that disburse revenues through these same household structures therefore risk institutionalising, rather than redressing, pre-existing gender inequalities. (Marcos Morezuelas 2014)

The governance of community funds must therefore be understood as a site of political contestation rather than a purely administrative matter. Community energy projects are open to forms of appropriation that reproduce the very gender relations they aim to challenge, and an intersectional analytical perspective is needed to capture the interconnected nature of multiple forms of discrimination and exclusion that shape who benefits. (Broto 2024) Research on solar energy communities in Germany reinforce this point, finding that participation in energy decision-making is influenced by social and economic factors including gender, economic status, and homeownership, and that despite women displaying stronger environmental concern than men, energy communities tend to be dominated by men. (Vogel et al. 2024) In the Global South, the stakes are often more severe: large-scale solar projects in Karnataka, India, resulted in the loss of autonomous income for landless women, thereby increasing their dependence on male household members, while women remained excluded from the very decision-making processes that guided the transition. (Cellini et al. 2025)

Addressing these structural dynamics requires both procedural and distributive reforms to benefit sharing design. Frameworks drawing on energy justice theory argue that moderating factors of gender empowerment interventions (intrahousehold bargaining dynamics, a lack of financial incentives, and limited representation in governance structures) undermine the effectiveness of otherwise well-intentioned energy policies. Accordingly, the Natural Resource Governance Institute has argued that by recognising property rights and ensuring that benefit sharing mechanisms reflect women's needs, governmental and development agencies can support women to take up roles as clean energy entrepreneurs and to contribute meaningfully to consultations about large-scale projects. (NRGI 2023) These interventions, however, must be embedded within broader institutional reform. Inclusive policy design requires governments and organisations to proactively involve women and marginalised groups at all stages of the energy transition, from planning through to implementation and evaluation, ensuring equal access to resources, training, and leadership opportunities.

6. Discussion

Choosing between fiscal measures, community benefit schemes and local ownership models should begin with a clear statement of objectives and priorities. Fiscal measures are best suited if the priority is immediate fiscal stability for municipalities. Community benefit schemes can best target mitigation of project impacts and rapid social acceptance, while durable local value capture and economic resilience can be best achieved by local ownership schemes.

In Indonesian coal mining regions, where coal revenues often dominate local economies, budgets and livelihoods, these objectives must consider that RE alone will not be able to fully replace lost fiscal and employment flows in the short term. Therefore, we suggest a pragmatic, hybrid approach: use fiscal instruments to secure baseline public services and social protection, deploy negotiated community benefits to reduce conflict during permitting, and pursue local ownership as a medium-term strategy to grow recurring local income and diversify the economy.

Institutional readiness and governance criteria

Instrument choice depends critically on institutional capacity. Fiscal measures require functioning public finance systems, transparent allocation rules and credible auditing to ensure revenues reach affected municipalities and vulnerable households. Community benefit schemes demand independent facilitation, legal and technical support for community negotiators, and enforceable monitoring and grievance mechanisms to prevent capture by local elites. Local ownership models need cooperative or municipal governance capacity, clear rules for shared equity and grid access, and business management skills. Where these capacities are weak, policy design must include funded capacity building and external oversight.

Equity and participation as design imperatives

Equity and meaningful participation must be central design criteria. Every instrument should specify how benefits reach non-landowning households, women, indigenous peoples and other marginalized groups. This can be achieved through trust funds with defined beneficiary rules, quotas for representation on fund or cooperative boards, targeted grants for vulnerable households, or compensated participation so that community members can engage without financial hardship. Communities also need paid facilitation, access to independent legal and technical advice, and accessible information from project inception through operation.

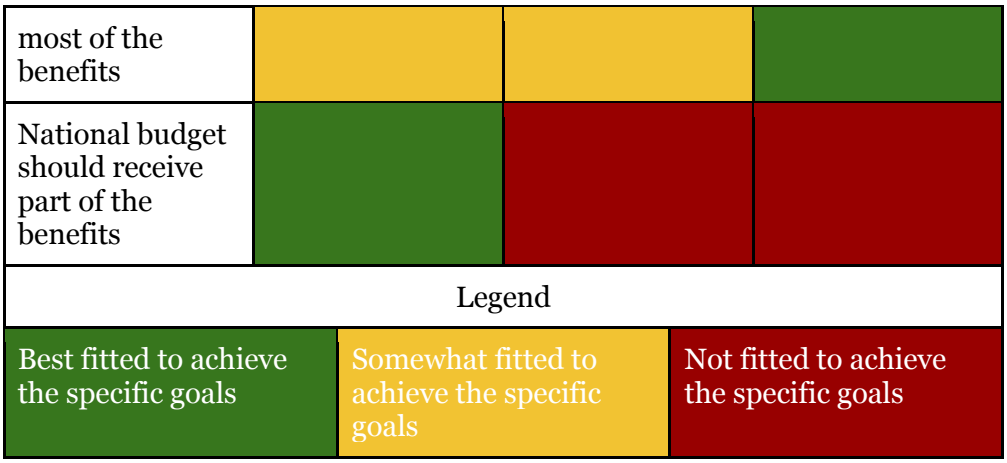
Financial sequencing and support mechanisms

Given limited local capital in many coal regions, sequencing matters. Immediate statutory revenue shares or mandated fiscal minimums provide short-term stability and social protection. In parallel, developer-led CBS/CBA can deliver visible, near-term benefits that ease social tensions. Over the medium term, governments and development partners should provide concessional finance, loan guarantees and seed capital to enable phased community equity participation. Technical assistance programs and regional finance hubs should prepare cooperatives or municipal partners to manage assets, attract private co-investors and scale local procurement, thereby converting one-off payments into sustained local income streams.

Policy pathway for coal mining regions

For Indonesian coal regions and similar contexts, a hybrid pathway with subsequent stages could be a way forward. First, legislate minimum fiscal shares to secure immediate municipal revenues and social protection. Second, mandate developer-led CBS/CBA with funded community support to secure permits and reduce conflict while simultaneously investing in capacity building, concessional finance and regulatory reforms that enable gradual local equity participation, and institutionalizing inclusion safeguards and independent oversight throughout.

	Tax and Fiscal Mechanisms	Community Benefit Schemes	Local Ownership Models
Trust in institutions / enterprises			
Investment capacity			
Few Bureaucratic Hurdles			
Social Cohesion			
Municipality should receive part of the benefits			
Ordinary people should receive			


most of the benefits
National budget should receive part of the benefits
Legend
Best fitted to achieve the specific goals
Somewhat fitted to achieve the specific goals
Not fitted to achieve the specific goals

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