

Just Energy Transition Glossary

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Just Energy Transition in Coal Regions



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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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Introduction

The Just Energy Transition Glossary explains a variety of terms used across just energy transition (JET) topics based on literature review. It serves as a comprehensive reference guide, offering definitions and explanations of key terms related to JET. Comprising accessible explanations, it caters to various audiences, including, policymakers, industry professionals, academics, civil societies, trade unions and economic actors. References lead to further readings.

From green jobs to technical mine closure and energy justice, the glossary provides a common understanding of essential concepts. With a shared understanding of the vocabulary that underpins the processes, the work towards low-carbon, climate resilient energy systems, and sustainable and just local economies and communities can be sharpened. As Just Energy Transitions are continuously evolving, the glossary is a starting collection of concepts and developments and can be expanded with emerging terms.

This glossary was developed by the “Innovation Regions for a Just Energy Transition” project. Please note that terms described in this glossary are customized in relation to Just Energy Transition.

The project “Innovation Regions for a Just Energy Transition” supports a transition away from a coal-based, unsustainable energy system towards a net zero emission and climate resilient energy system while ensuring environmental protection, inclusive and sustainable economic development with decent employment opportunities along with social protection in selected coal regions in Asia, Africa and Latin America.

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Abbreviations and Acronyms

CCUS	Carbon capture, utilisation, and storage
CMM	Coal mine methane
CO2	Carbon dioxide
COP26	26 th UN Climate Change Conference of the Parties district
FPIC	Free, prior, and informed consent
GHG	Green House Gas
ILO	International Labour Organization
JET	Just Energy Transition
JET-P	Just Energy Transition Partnership
SDGs	Sustainable Development Goals
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

Behavioural and societal lock-in

The behavioural lock-in has two dimensions: lock-in of carbon-intensive behaviours through individual decision-making and lock-in of carbon-intensive behaviours through social structure.¹ It refers to psychological processes underlying individual decision-making like habits, risk avoiding behaviour and collective action problem. The societal lock-in refers to the interaction between society and government.²

Biodiversity

Variety of living species on Earth, including animals, plants fungi, and bacteria.³ Fossil fuel extraction puts biodiversity indirectly at risk through a changing climate and directly through habitat loss and pollution.⁴

Buen vivir

The concept of “buen vivir” originated in Latin America and encompasses the notion of the coexistence of diverse people in harmony with nature.⁵

Carbon capture, utilisation, and storage

Carbon capture, utilisation, and storage (CCUS) stands for catching carbon dioxide (CO₂) directly from the atmosphere or from large point sources that use fossil fuels or biomass as fuel.⁶

Carbon lock-in

Condition that results based on “path-dependent processes driven by technological and institutional increasing returns to scale.”⁷ Path dependency is promoted through the following self-reinforcing mechanisms: long-lived physical capital, human capital, common perceptions that carbon-intensive practices are somehow natural, the benefits of moving in a set direction and vested interests.⁸

Carbon neutrality

Carbon neutrality means that produced CO₂ emissions are reduced by compensating for these by carbon offsetting (the practice of reducing emissions elsewhere or removing an equal amount of CO₂ from the atmosphere).⁹

Carbon pricing

Carbon pricing limits GHGs by offering an incentive (i.e., economic) for reducing emissions and/or putting a fee on emitting, shifting consumption and investment patterns.¹⁰

Climate change

“Change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer.”¹¹ These changes are caused by direct or indirect human activities and natural factors.¹²

¹ Seto, K. C. et al., “Carbon lock-in: types, causes, and policy implications,” *Annual Review of Environment and Resources*, 2016, p. 438.

² Ibid.

³ National Geographic, “Biodiversity,” (n.d.). Biodiversity (nationalgeographic.org) (accessed May 11, 2023).

⁴ Harfoot, M. et al., “Present and future biodiversity risks from fossil fuel exploitation,” *A Journal of the Society for Conservation Biology*, no. 11(4), 2018.

⁵ Hernández, G., Laats, H., “Buen vivir: Concept on the rise in Europe?,” *Green European Journal*, 2020. (greeneuropeanjournal.eu) (accessed May 11, 2023).

⁶ IEA, “Carbon capture, utilization and storage,” n.d. Carbon capture, utilisation and storage - Fuels & Technologies - IEA.

⁷ Unruh, G.C., “Understanding carbon lock-in”, *Energy policy*, no. 20(12), 2000, p. 817-830.; Erickson, P. et al., “Assessing carbon lock-in,” *Environmental Research*, no. 10(8), 2015.

⁸ Rosenbloom, D., “Breaking carbon lock-in through innovation and decline,” *University of Toronto*. 2020.

⁹ Chen, L. et al., „Strategies to achieve a carbon neutral society: a review”, *Environmental Chemistry Letters*, no. 20, 2022.

¹⁰ UNFCCC, “Carbon Pricing,” n.d. About Carbon Pricing | UNFCCC (accessed May 11, 2023).

¹¹ IPCC, “Glossary of terms,” *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation*, Cambridge University Press, 2012, pp. 555-564.

¹² Ibid.

Climate justice

The concept seeks to balance historical and present inequalities resulting from those who have caused climate change. It is the remediation of climate change impacts on marginalised, poor, and vulnerable people, and compensation for harms suffered by such communities.¹³

Climate change mitigation

Mitigation refers to efforts to reduce GHGs by using new technologies and renewable energies, changing management practices or consumption behaviour, or making older equipment more energy efficient.¹⁴

Climate resilience

Ability to timely and efficiently anticipate and respond to hazardous events that occur due to the increasing frequency and intensity of extreme weather and climate catastrophes worldwide. The vision of climate resilience is to be achieved through interdependent outcomes, namely: resilient people and livelihoods, resilient business and economies, and resilient environmental systems.¹⁵

Coal Culture

The just energy transition is inclusive to all cultures and traditions as part of the economy and society. Notably, the coal mining culture is a unique culture on its own, formed by the coal industry itself.¹⁶

Coal mine methane

Coal mine methane (CMM) refers to the “methane released from coal and the surrounding rock strata from mining activities.”¹⁷ CMM is released by active underground mining, abandoned, or closed mines, and surface mines.¹⁸ Action to cut down coal methane emissions is needed for climate action.¹⁹

Coal phase-out

Phasing out of coal in the power sector includes the following aspects: “halting the construction of new plants and managing the decline in emissions from existing assets.”²⁰ The phase out of a coal-fired power station is gradual and measured with an indicator that pictures the evolution of the installed capacity of the plant, showing evidence of a progressive phase-out.²¹ When operation ends, one subtracts the corresponding capacity from the balance sheets.²²

Coal-related infrastructure repurposing

Coal-related infrastructure has assets (i.e., railway lines, strong electricity grids, access to rivers), which can offer potential for future uses such as industry and renewables.²³

Conventional energy or fossil fuels

Conventional energy sources such as natural gas, oil and coal are finite resources but hold most of the energy market.²⁴

¹³ Burkett, M., “Just solutions to climate change: a climate justice proposal for domestic clean development mechanism,” *Buff. Law Review*, no. 170, 2008, pp. 192-93.

¹⁴ UNEP, “Mitigation,” n.d. Mitigation | UNEP - UN Environment Programme (accessed May 11, 2023).

¹⁵ UNFCCC & Marrakesh Partnership, “Climate Action Pathway: Climate Resilience: Executive Summary,” n.d. ExecSumm_Resilience_0.pdf (unfccc.int) (accessed May 11, 2023).

¹⁶ UMWA, “Coal Culture: How the Industry Formed a Culture and Where Its Future Is Headed - UMWA,” n.d. (accessed May 11, 2023).

¹⁷ US EPA, “About coal mine methane,” n.d. About Coal Mine Methane | US EPA (accessed May 15, 2023).

¹⁸ Ibid.

¹⁹ IEA, “Driving down coal mine methane emissions. A regulatory roadmap and toolkit,” 2023.

²⁰ IEA, “Phasing out coal – World Energy Outlook 2021 – Analysis - IEA,” 2021, (accessed May 11, 2023).

²¹ Enel, “The glossary of sustainable energy | Enel Green Power“, n.d. (accessed May 11, 2023).

²² Ibid.

²³ Wuppertal Institute, “Just Transition Toolbox for coal regions,” 2022.

²⁴ Muyeen, S.M. & Beig, A. R., “Wind Energy,” *Electric Renewable Energy Systems*, 2016.

Cosmopolitan justice

It refers to the notion that energy injustice is a universal issue and cross-border repercussions of activities of the energy sector must be recognised in a globalised world.²⁵

Decarbonisation

Process of reducing or halting carbon gases such as CO₂ being released into the atmosphere due to ongoing burning of fossil fuels.²⁶ It implies the transition from fossil fuels to renewable energy that is less harmful for the environment.

Decent jobs

The International Labour Organization (ILO) defines decent jobs as “work that is productive and delivers a fair income, security in the workplace and social protection for all, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.”²⁷

Decommissioning

Operations that dismantle and remediate the structures and components of a power station at the end of its working life, which is relevant to prevent soil, water, and air pollution and finance allocated.²⁸

Discourse

“(A) long and serious treatment or discussion of a subject in speech or writing.”²⁹ Managing the just energy transition through discourse about justice in the energy transition is vital to raise awareness and a common sense of understanding on a just energy transition. Social dialogue including relevant stakeholders such as governments, civil society organisations, power utilities and corporations of the coal industry, trade unions, (local) knowledge actors and science on the global, national, regional, and local levels is relevant to achieve this.³⁰

Distributive justice

Distributive justice is outcome-focused and refers to the fair distribution of environmental goods and well-being by considering environmental quality (benefits) and risks (costs).³¹ It concerns the access to resources and associated opportunities,³² as well as vulnerabilities, needs, and responsibility in the energy transition.³³ It deals with the question of whether all individuals equally share the benefits and burdens of the energy systems – “who gets what?”³⁴ For example, it deals with how a gradual coal phase-out will affect vulnerable

²⁵ Heffron, R.J. & McCauley, D., “The Concept of Energy Justice Across the Disciplines,” *Energy Policy*, no. 105, 2017, p. 658; Sokołowski, M.M. & Kurokawa, S., “Energy justice in Japan’s energy transition: pillars of just 2050 carbon neutrality,” *The Journal of World Energy Law & Business*, no. 15(3), 2022, pp. 183–192.

²⁶ Cambridge Dictionary “Decarbonization” <https://dictionary.cambridge.org/dictionary/english/decarbonization> (accessed May 11, 2023)

²⁷ ILO, “Decent work,” Decent work (ilo.org) (accessed May 11, 2023).

²⁸ Rempel, A. & Gupta, J., “Fossil fuels, stranded assets and COVID-19: Imagining an inclusive & transformative recovery,” *World Development*, no. 146, 2021.

²⁹ Oxford Dictionary, “Discourse,” discourse_1 noun - Definition, pictures, pronunciation and usage notes | Oxford Advanced American Dictionary at OxfordLearnersDictionaries.com (accessed May 11, 2023).

³⁰ GIZ & adelphi, “From growth to wellbeing - by GIZ & partners. Factsheet for podcast: Just transition,” 2022.

³¹ Low, N. & Gleeson, B., “Situating Justice in the Environment: The Case of BHP at the Ok Tedi Copper Mine,” *Antipode*, no. 30(3), 1998; Scott, D. & Oelofse, C., “Social and environmental justice in South African cities. Including ‘invisible stakeholders’ in environmental assessment procedures,” *Journal of Environmental Planning & Management*, no. 4, 2007; Williams, S. & Doyon, A., “Justice in energy transitions,” *Environmental Innovations & Social Transitions*, no. 31, 2019.

³² Schlosberg, D., “Defining environmental justice: Theories, movements, and nature,” 2007, Oxford/New York: Oxford University Press.

³³ Walker, G., “Environmental Justice: Concepts, evidence and politics,” 2011, Routledge.

³⁴ Initiative for Energy Justice, “<https://iejusa.org/glossary-and-appendix/>”, n.d. (accessed May 11, 2023).

people such as workers in the fossil fuel industry and in related sectors.³⁵

Ecological inclusiveness

Ecological inclusiveness underlines the need to share limits of natural resources.³⁶ On the international level, it ensures equity when dealing with global issues like climate change.³⁷ On the national level, ecological inclusiveness concerns managing resources in a way that guarantees ecosystem sustainability.³⁸ On the local level, it deals with safeguarding local ecosystems and ensures resource access and ownership.³⁹ Hence, ecological inclusiveness requires a) ecosystem limits, b) the equitable rights, responsibilities, and risks regarding the limits of our ecosystem, c) legal protection and capacity-building, d) greening of trade and investments, and e) stakeholder engagement and implementation.⁴⁰ Regarding a fossil or coal phase-out, it concerns who has access to coal, the risks of burning coal, abuse of the right to access coal, the responsibility and compensation for risks with the burning of coal and its damage.⁴¹

Energy democracy

A concept developed within the environmental justice movement which refers to that communities should have a

voice and agency in energy governance, shaping their energy future.⁴² Objectives include: “resisting the fossil-fuel-dominant energy agenda”, “reclaiming”, and “democratically restructuring” energy regimes.⁴³

Energy justice or equity

Energy justice deals with the following aspects: “where injustices emerge, which affected sections of society are ignored”, and which processes exist for their remediation (...) to reveal and reduce such injustices.”⁴⁴ It has the objective to reach equity in the energy system, while remediating burdens of those historically harmed by the energy regime.⁴⁵

Environmental justice

Environmental justice concerns the notion that marginalised or disadvantaged communities do not face environmental burden or adverse human health effects.⁴⁶

Energy security

Energy security means the “reliable, affordable access to all fuels and energy sources.”⁴⁷ It guarantees access to uninterrupted energy sources availability at an affordable price.

³⁵ Healy, N. & Barry, J., “Politicizing energy justice and energy system transitions: Fossil fuel divestment and a just transition,” *Energy Policy*, no. 108, 2017.

³⁶ Gupta, J., “Grasping the essentials of the climate change problem,” *The History of Global Climate Governance*, 2014, pp. 3-21.

³⁷ Gupta, J. & Vegelin, C., “Sustainable development goals and inclusive development,” *International Environmental Agreements: Politics, Law & Economic*, no. 16, 2016.

³⁸ Ibid.

³⁹ Ibid.; Pouw, N. & Gupta, J., “Inclusive development: a multi-disciplinary approach,” *Current Opinion in Environmental Sustainability*, no. 24, 2017.

⁴⁰ Ibid.

⁴¹ Ibid.; Gupta, J. & Lebel, L., “Access and allocation in earth system governance: water and climate change compared,” *International Environmental Agreements: Politics, Law & Economics*, no. 10, 2010.

⁴² Martinez, C. & Gupta, S., “Climate justice and energy democracy: a platform vision,” *Center for Earth, Energy and Democracy*, 2015.

⁴³ Burke, M.J. & Stephens, J.C., “Democracy: Goals and Policy Instruments for Sociotechnical Transitions,” *Energy Democracy*, no. 33, 2017.

⁴⁴ Jenkins, K. et al., “Energy justice: a conceptual view,” *Energy Research & Social Science*, no. 11, 2016.

⁴⁵ Initiative for Energy Justice, “<https://iejusa.org/glossary-and-appendix/>”, n.d. (accessed May 11, 2023).

⁴⁶ Agyeman, J. & Evans, B., “Just sustainability: the emerging discourse of environmental justice in Britain?” *The Geographical Journal*, no. 170 (2), 2004; Bullard, R.D. & Johnson, G.S., “Environmental justice: grassroots activism and the impact on public policy decision-making,” *Soc. Issues*, no. 56, 2000.

⁴⁷ IEA, “Energy security,” 2023, Energy security – Topics - IEA (accessed May 11, 2023).

Fossil fuel phase-out or leaving fossil fuels underground

“A policy, instrument, or measure with the explicit goal of taking climate action and that may directly or indirectly diminish fossil fuel production and consumption.”⁴⁸ It is achieved when investments in new fossil fuel assets halts instantly and existing facilities are phased out.⁴⁹

Free, prior, and informed consent (FPIC)

The right of indigenous peoples to give or withhold free, prior and informed consent, at any point, regarding projects impacting their territories. The right is recognised in the UN Declaration on the Rights on Indigenous Peoples (UNDRIP) and allows indigenous peoples “to engage in negotiations to shape the design, implementation, monitoring, and evaluation of projects”.⁵⁰

Frontline communities

Communities that face serious consequences of climate change or suffer from the energy system such as extractive energy production and resulting pollution.⁵¹

Gas as a transition fuel narrative

The role of fuel switching from coal to natural gas to reduce CO₂ emissions and air pollutants.⁵² However, this narrative must be viewed with caution as it could steer away from investments in renewable energy,⁵³ as well as potentially create carbon lock-in when new large gas-to-power projects result.

⁴⁸ Gupta, J., “The LFFU Project (leavefossilfuelsunderground.org)”, 2021.

⁴⁹ Rempel, A. & Gupta, J., “Fossil fuels, stranded assets and COVID-19: Imagining an inclusive & transformative recovery,” *World Development*, no. 146, 2021.

⁵⁰ FAO, “Free, Prior and Informed Consent”, n.d., Free, Prior and Informed Consent | Indigenous Peoples | Food and Agriculture Organization of the United Nations (fao.org)

⁵¹ Initiative for Energy Justice, “Glossary and Appendix - Initiative for Energy Justice (iejusa.org),” n.d. (accessed May 11, 2023).

⁵² IEA, “The Role of Gas in Today's Energy Transitions – Analysis - IEA,” 2019, n.p. (accessed May 11, 2023).

⁵³ Gürsan, C. & de Gooyert, V., “The systemic impact of a transition fuel: Does natural gas help or hinder the energy

Gender

Gender refers to socially and politically constructed roles of individuals, which includes behaviours, norms, relationships, and roles associated with being a woman, girl, man, or boy. Gender varies from society to society and can change over time. It furthermore is hierarchical and produces inequalities, leading to discrimination that often intersects with other factors of discrimination.⁵⁴

Gender equality

Gender equality refers to all individuals and means equal rights, opportunities, and responsibilities between women and men and girls and boys.⁵⁵ Its objective is the equal treatment to all genders.⁵⁶

Gender justice

Gender justice goes beyond gender equality as it seeks to comprehending root inequalities of gender inequality and strives for equal power and rights.⁵⁷

Gender responsive policies

A step towards gender equality. It means to develop international norms on gender equality in laws, policies, and institutions that integrate gender considerations.⁵⁸

transition?” *Renewable & Sustainable Energy Reviews*, no. 138, 2021.

⁵⁴ WHO, “Gender and health,” 2021, Gender (who.int) (accessed May 11, 2023)

⁵⁵ UN Women, “Concepts and definitions,” n.d., OSAGI Gender Mainstreaming - Concepts and definitions (un.org) (accessed May 11, 2023).

⁵⁶ Ibid.

⁵⁷ UNDP, “Justice: Gender Justice,” n.d., Gender justice | United Nations Development Programme (undp.org) (accessed May 11, 2023).

⁵⁸ UN Women, “Gender-Responsive policies and institutions,” n.d., Gender-Responsive Policies and Institutions | UN Women – Headquarters (accessed May 11, 2023).

Gender-transformative interventions

The pursue of direct transformations of gender roles and inequalities, and critical questioning of binaries.⁵⁹

Green dilemma or paradox

The green dilemma describes the contradicting aims of environmental quality and economic growth.⁶⁰ It refers to the clash between natural resources extraction and nature protection.⁶¹

Green jobs

The International Labour Organization defines green jobs as “decent jobs that contribute to preserve or restore the environment,” both in traditional and emerging green sectors, including energy efficiency and renewable energy.⁶²

Inclusive development

Inclusive development focuses on “social well-being and protecting the ecosystem services of nature through redefining political priorities, especially in the context of the Anthropocene”.⁶³ It rejects continuous economic growth and includes relational power politics, environmental and social well-being.⁶⁴ It further necessitates interactive governance that includes ecological and developmental principles that

consider social, environmental, and relational aspects of inclusiveness.⁶⁵

Informal economy

“[...] all economic activities by workers and economic units that are – in law or in practice – not or insufficiently covered by formal arrangements”.⁶⁶ According to International Labour Organization, it comprises more than half of the labour force worldwide.⁶⁷

Informal employment

Informal employment refers to “the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households, during a given reference period.”⁶⁸ Informal workers count to a key consideration for designing and implementing just transition measures due to their “large numbers, low income, poor skill and educational levels, and lack of social safety-net.”⁶⁹

Infrastructure lock-in

Infrastructure and technological lock-in refers to long-lived capital stock and investments “where costs occur now but payoffs later and create substantial sunk costs.”⁷⁰ Hence, the built environment determines the energy demand for a

⁵⁹ Feminist Development Policy – For Just and Strong Societies Worldwide (bmz.de/resource/blob/153806/bmz-strategy-feminist-development-policy.pdf) (accessed July 24, 2023)

⁶⁰ Barua, S. & Aziz, S., “Chapter 15 - making green finance work for the sustainable energy transition in emerging economies,” *Energy-Growth Nexus in an Era of Globalization*, (2022): p. 353-382; Xu, Q., Dhaundiyal, S. & Guan, C., “Structural conflict under the new green dilemma: Inequalities in development of renewable energy for emerging economies,” *Journal 87 of Environmental Management*, no. 273(1), 2020.

⁶¹ Ibid.

⁶² ILO, “Green jobs,” 2016, What is a green job? (ilo.org) (accessed May 11, 2023).

⁶³ Pouw, N. & Gupta, J., “Inclusive development: a multi-disciplinary approach,” *Current Opinion in Environmental Sustainability*, no. 24, 2017, p. 104.

⁶⁴ Gupta, J., Pouw, N.R., & Ros-Tonen, M.A., “Towards an elaborated theory of inclusive development,” *The European Journal of Development Research*, no. 27(4), 2015.

⁶⁵ Gupta, J. & Pouw, N., “Towards a trans-disciplinary conceptualization of inclusive development,” *Current Opinion in*

Environmental Sustainability, no. 24, 2017; Gupta, J. & Vegelin, C., “Sustainable development goals and inclusive development,” *International Environmental Agreements: Politics, Law & Economic*, no. 16, 2016; Lorek, S. & Spangenberg, J.H., “Sustainable consumption within sustainable economy – beyond green growth and green economies,” *Journal of Cleaner Production*, no. 63, 2014.

⁶⁶ ILO, “Informal economy,” 2015, Informal economy (Partnership for improving prospects for forcibly displaced persons and host communities (PROSPECTS)) (ilo.org) (accessed May 11, 2023).

⁶⁷ ILO, “Informal economy,” n.d., Informal economy (EMPLOYMENT) (ilo.org) (accessed May 11, 2023).

⁶⁸ ILO, “Statistical definition of informal employment: Guidelines endorsed by the Seventeenth International Conference of Labour Statisticians (2003),” 2004, IE.DelhiGroup7_2004_.doc (ilo.org) (accessed May 11, 2023).

⁶⁹ Banerjee, S., “Just Transition and informal workers in coal regions in India;” *iForest*, 2022: p. 5.

⁷⁰ Seto, K. C. et al., “Carbon lock-in: types, causes, and policy implications,” *Annual Review of Environment and Resources*, 2016, p. 427.

prolonged period after its construction.⁷¹ The infrastructure lock-in takes three dimensions: fossil fuel burning infrastructure, fossil fuel supporting infrastructure and fossil fuel demanding infrastructure.⁷²

Institutional lock-in

The thinking “institutional choices at one point in time significantly shape later choices” informs the institutional lock-in.⁷³ Institutions influence the production and consumption of energy through their governance and decision-making.⁷⁴

Intergenerational justice

Reconciling human well-being with ecosystems, recognizing that the two are inextricably linked. Intergenerational justice concerns a conflict of interest and distributive justice between generations because it deals with the trade-offs between the use of fossil fuels today and its preservation for future generations.⁷⁵ It proposes that one should include generations from tomorrow in the redistribution scheme of energy justice.⁷⁶

Intersectionality

Intersectionality is the complex, cumulative way in which the effects of different forms of discrimination are combined and become mutually reinforcing. It means that discrimination does not exist in a vacuum – different kinds of prejudice can be amplified

in different ways when put together. For example, gender and race shall not be analysed separately. Women of colour, for example, are doubly discriminated against and experience these two forms of discrimination in a unique way. Intersectionality is a tool to holistically understand social inequalities and counter them.⁷⁷

Just energy transition

As of today, there is no common definition of what entails a just energy transition (JET). Its discourse originated in trade unions where workers in North America lost their jobs due to environmental protection policies in the 1970s.⁷⁸ At the Rio+20 Summit in 2012, the guiding principles of increased dignity, human rights, social equality, and good governance were brought to the global level.⁷⁹ In 2015, just transition was included in the preamble of the Paris Climate Agreement: “*Taking into account* the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.”⁸⁰

JET is a holistic approach and refers to the idea that justice or equity are an integral part of the transition toward low-carbon emissions. It seeks to address the tension between justice and decarbonisation by drawing on energy injustices and justice.⁸¹ In particular, it deals with the question: “who

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid., p. 433

⁷⁴ Ibid.

⁷⁵ Barry, B., “Sustainability and Intergenerational Justice,” *Routledge*, 1997; Meadows, D.H. et al., “The limits to growth: A report for the club of rome’s project on the predicament of mankind,” *Demography*, no 10, 1973; Pellegrini-Masini, G. et al., “Energy justice revisited: A critical review on the philosophical and political origins of equality,” *Energy Research and Social Science*, no. 59, 2020.

⁷⁶ Pellegrini-Masini, G. et al., “Chapter 13: energy justice and intergenerational ethics: Theoretical perspectives and institutional designs,” *Uppsala University: Uppsala, Sweden*, 2019.

⁷⁷ BMZ, *Feminist Development Policy – For Just and Strong Societies Worldwide*, 2023. *Feminist Development Policy - For Just and Strong Societies Worldwide* (bmz.de)

⁷⁸ Hirsch, T. et al., “Guiding principles & lessons learnt for a just energy transition in the global South,” *Friedrich-Ebert-Stiftung*, 2017.

⁷⁹ Ibid.

⁸⁰ United Nations/Framework Convention on Climate Change, “Adoption of the Paris Agreement, 21st Conference of the Parties,” Paris: United Nations, 2017.

⁸¹ Healy, N. & Barry, J., “Politicizing energy justice and energy system transitions: Fossil fuel divestment and a just transition,” *Energy Policy*, no. 108, 2017.

wins, who loses, how, and why?”⁸² Thereby, it promotes the transition to low-carbon economy that facilitates “dignified, productive, and ecologically sustainable livelihoods; democratic governance; and ecological resilience.”⁸³ Redefining economic prosperity and social well-being, instigating dialogue between labour, social justice, climate, and the environment are prerequisite for its achievement.⁸⁴ Nevertheless, the concept remains elusive as it lacks clarity in its real-world application.⁸⁵

Just Energy Transition Partnership

The Just Energy Transition Partnership (JET-P) was announced at the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow. JET-Ps are a nascent financing cooperation mechanism which aim it is to support heavy coal-reliant emerging economies to transition from coal production and consumption in a way that address social consequences involved.⁸⁶ At its heart lies the training and alternative job creation for affected workers and economic opportunities for affected communities.⁸⁷

JET-P Countries

France, Germany, UK, US, and EU launched International Just Energy Transition Partnership (JET-P) with South Africa in 2021 to support South Africa’s decarbonisation efforts with a focus on the electricity system and initial commitment of

\$8.5 billion.⁸⁸ Furthermore, the EU and international partners launched JET-P with Indonesia in 2022.⁸⁹ Financing aims at supporting Indonesia’s just energy transition. Also, Vietnam and the International Partners Group (IPG) launched a JET-P on the EU-ASEAN summit in 2022, which will mobilise an initial \$15.5 billion of public and private finance.⁹⁰ As a fourth JET Partnership, Senegal and the IPG announced their launch in 2023.⁹¹

Land and environmental remediation

Mine closure projects ideally have the objective to adequately close mines and repurpose land, which includes to: “prevent negative impacts to soil, water, and air resources in and near mined areas; restore the quality of soils to their pre-mining level; and maintain or improve landscape and functional quality.”⁹²

Leapfrogging (to clean energy)

The opportunity to leapfrog or bypass fossil-intensive energy to adopt renewable energy – more efficient and cleaner technologies and modes of production.⁹³ This is possible through energy technologies that exist today but did not when industrialised countries were at similar development stage.⁹⁴

Leave No One Behind Principle

Principle addressing the accountability of all actors and stakeholders in society. It is the

⁸² Newell, P. & Mulvaney, D., “The political economy of the just transition,” *The Geographical Journal*, no. 179(2), 2013.

⁸³ Climate Justice Alliance, “Just transition. A framework for change,” 2019, Just Transition - Climate Justice Alliance (accessed May 11, 2023).

⁸⁴ Morena, E. et al., “Mapping Just Transition(s) to a Low-Carbon World,” *UNRISD*: Geneva, 2018; Gerrard, E. & Westoby, P., “Coal and Energy in South Africa: Considering a just transition,” *Edinburgh University Press*: Edinburgh, 2021.

⁸⁵ *Ibid.*

⁸⁶ IISD, “Just Energy Transition Partnerships: An opportunity to leapfrog from coal to clean energy | International Institute for Sustainable Development (iisd.org),” 2022 (accessed May 11, 2023).

⁸⁷ *Ibid.*

⁸⁸ EC, “Just Energy Transition Partnership with South Africa (europa.eu),” 2021 (accessed May 11, 2023).

⁸⁹ EC, “Just Energy Transition Partnership with Indonesia (europa.eu),” 2022 (accessed May 11, 2023).

⁹⁰ BMZ, “Just Energy Transition Partnership (JETP) with Viet Nam | BMZ,” 2022 (accessed May 11, 2023).

⁹¹ French Ministry for Europe and Foreign Affairs (<https://www.diplomatie.gouv.fr/en/country-files/senegal/news/article/senegal-and-the-international-partners-group-ipg-announced-a-just-energy>) (accessed July 24, 2023).

⁹² Michael, C. et al., “Managing coal mine closure: Achieving a just transition for all,” *World Bank Group*: Washington, D.C., 2018, p. 44.

⁹³ van Benthem, A.A., “Energy Leapfrogging,” *Journal of the Association of Environmental and Resource Economists*, no. 2(1), 2015.

⁹⁴ *Ibid.*

commitment of UN member states to “eradicate poverty in all its forms, end discrimination and exclusion, and reduce the inequalities and vulnerabilities that leaves people behind and undermine the potential of individuals and of humanity as a whole.”⁹⁵

Livelihood opportunities

Livelihood opportunities are defined as “opportunities that (...) individuals get engaged in with the main purpose of sustaining their living conditions.”⁹⁶

Low carbon energy transition

Low carbon energy transition refers to the transition from non-renewable/fossil-based energy sources to renewable sources to reduce energy-related carbon dioxide (CO₂) emissions.⁹⁷

Marginalisation

Marginalisation is defined as “the process through which persons are peripheralized on the basis of their identities, associations, experiences, and environments.”⁹⁸ It deprives a group of people from access to basic rights and meaningful participation in decision-making.⁹⁹

Meaningful work

Meaningful work refers to jobs that are essential for the well-being of workers, society, and nature as part of the energy transition.¹⁰⁰

Migrant labour

A migrant worker is someone “who is to be engaged, is engaged or has been engaged in a remunerated activity in a state of which they are not nationals.”¹⁰¹ Notably, foreign workers have low or non-existent employment rights and “lack equal treatment with nationals in their conditions of employment.”¹⁰²

Nationally Determined Contributions

Nationally Determined Contributions (NDCs) are a key component of the achievement of the long-term goals of the Paris Climate Agreement by embodying efforts by each country to adapt to the impacts of climate change and reduce emissions at the national level.¹⁰³

Natural stranded assets

Natural stranded resources refer to proven fossil fuel reserves and are often discussed related to “unburnable carbon” – fossil fuels that can no longer be extracted.¹⁰⁴

Net zero

Net zero means cutting greenhouse gas emissions (GHGs) close to zero through replacing fossil fuels with non-pollutants and becoming sustainable across all parts of the economy to removing as many CO₂ emissions as it produces, with any remaining emissions absorbed by the atmosphere by, for instance, oceans and forests.¹⁰⁵

⁹⁵ UNSDG, “Universal values: leave no one behind,” UNSDG | Leave No One Behind, n.d. (accessed May 11, 2023).

⁹⁶ Kapur, R., “Livelihood opportunities in rural areas,” *Acta Scientific Agriculture*, no. 3(7), 2019.

⁹⁷ Langhelle, O., “Low Carbon Transition”, n.d., Low Carbon Transition – Taskforce on Conceptual Foundations of Earth System Governance.

⁹⁸ Hall et al, “Marginalization: A guiding concept for valuing diversity in nursing knowledge development,” *Advances in Nursing Science*, no. 16(4), 1994, p. 25.

⁹⁹ Ibid.

¹⁰⁰ Culot, M. & Wiese, K., “Reimagining work for a just transition,” *European Environmental Bureau*: Brussels, 2022.

¹⁰¹ EC, “Migrant worker,” migrant worker (europa.eu), n.d. (accessed May 11, 2023).

¹⁰² OECD, “Labour Migration and the Recent Financial Crisis in Asia,” *OECD Publishing*: Paris, 2000, p. 9.

¹⁰³ UNFCCC, “The Paris Agreement. What is the Paris Agreement?”, The Paris Agreement | UNFCCC, n.d. (accessed May 11, 2023).

¹⁰⁴ Bos, K. & Gupta, J., “Stranded assets and stranded resources: Implications for climate change mitigation and global sustainable development,” *Energy Research & Social Science*, no. 56, 2019; Shimbar, A., “Environment-related stranded assets: An agenda for research into value destruction within carbon-intensive sectors in response to environmental concerns,” *Renewable & Sustainable Energy Reviews*, no. 144, 2021; Bebbington, J. et al., “Fossil fuel reserves and resources reporting and unburnable carbon: Investigating conflicting accounts,” *Critical Perspectives on Accounting*, no. 66, 2020.

¹⁰⁵ ACER, “ACERs European Green Deal Glossary,” Glossary.pdf (europa.eu) (accessed May 11, 2023).

Occupational safety and health

Referring to the “science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities and the general environment.”¹⁰⁶

Political economy of coal

Demonstrating why some countries keep expanding coal capacity.¹⁰⁷ The ministry of energy, the ruling party and head of state are often, besides the economic actors, such as mining companies and utilities, the most powerful or influential actors.¹⁰⁸ Pro-coal actors seek to expand coal capacity by often arguing that coal provides low costs, stable electricity, and economic growth – while putting environmental aspects behind.¹⁰⁹ On the contrary, social actors are the least influential.¹¹⁰

Post-colonial approach

This approach endeavours to comprehend the effects of colonialism on present political, social, and economic systems.¹¹¹ Furthermore, decolonisation refers to a restorative justice process that aims to empower oppressed and marginalised individuals to enjoy inclusion and equality.

Polluter Pays Principle

The polluter pays principle “means that the polluter should bear the expenses of carrying out the measures (...) to ensure that the environment is in an acceptable state.”¹¹²

Procedural justice

Procedural justice concerns the meaningful inclusion and equitable decision-making of all individuals regarding energy system infrastructures, technologies, and environmental decisions in a non-discriminatory way so that disadvantaged communities are not subject among others to environmental harm.¹¹³ Procedural fairness necessitates meaningful decision-making and making information available, accessible, and understandable.¹¹⁴ In light of the right of self-determination, frontline communities are entitled to control their destiny – they have resilience and expertise to craft solutions.¹¹⁵

Reallocation of fossil fuel subsidies

Reallocating fossil fuel subsidies can support the just energy transition by a) “utilizing the created budget space to address some of the concerns that may arise from reform”, b) “smooth implementation plans”, c) “support for workers”, d) “support for energy consumers”, and e) “employment potential in the renewable energy sector.”¹¹⁶

¹⁰⁶ Alli, B.O., “Fundamental principles of occupational health and safety,” *International Labour Office*, preface vii, 2008.

¹⁰⁷ Ohlendorf, N. et al., “The political economy of coal phase-out: Exploring the actors, objectives, and contextual factors shaping policies in eight major coal countries,” *Energy Research & Social Science*, no. 90, 2022.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Geneva Graduate Institute, “Gender ambition in climate policies: an application of the gender-just transitions outcomes framework,” 2022.

¹¹² OECD Legal Instruments, “Recommendations of the Council on the Implementation of the Polluter-Pays Principle,” OECD Legal Instruments, 1974, n.p. (accessed May 11, 2023).

¹¹³ Schlosberg, D., “Defining environmental justice: Theories, movements, and nature,” Oxford/New York: Oxford University Press, 2007; Scott, D. & Oelofse, C., “Social and environmental justice in South African cities: Including ‘invisible stakeholders’ in environmental assessment procedures,” *Journal of Environmental Planning & Management*, no. 48(3), 2007.

¹¹⁴ Williams, S. & Doyon, A., “Justice in energy transitions,” *Environmental Innovations & Social Transitions*, no. 31, 2019.

¹¹⁵ The Climate Justice Alliance, “Just transition. A framework for change,” Just Transition - Climate Justice Alliance (accessed May 11, 2023).

¹¹⁶ IISD & GSI, “Fossil fuel subsidy reform and the just transition: Integrating approaches for complementary outcomes,” fossil-fuel-subsidy-reform-just-transition.pdf (iisd.org), 2017, pp. 11-12 (accessed May 11, 2023).

Recognition justice

Recognition justice acknowledges different perspectives rooted in different backgrounds and concerns whose voices and concerns are recognized or ignored in relation to energy systems.¹¹⁷ It particularly deals with recognition of the rights of local and indigenous communities.¹¹⁸

Recognition of rights

The just energy transition must be done under the recognition of rights, such as ownership rights over natural resources and lands or the rights to repair products and consumer protection.¹¹⁹

Renewable energy

Renewable energy refers to sources like wind, solar, water, fuel cells, biogas/biomass, tidal, and geothermal that “are replenished at a higher rate than they are consumed.”¹²⁰

Restorative justice

Restorative justice concerns restoring distributive justice that resulted from the fossil fuel industry.¹²¹ For example, if fossil fuel projects harmed the environment, restorative justice aims at restoring that damage. Legal tools and proactive policy approaches can prevent harm and conflict. Corporate social responsibility and environmental impact assessments are examples to ensure energy justice.¹²²

Skill development and retaining upskilling

The just energy transition concerns the training, relocation assistance, and redeployment of workers from the fossil fuel industry in decent jobs with income opportunities.¹²³ This ensures both the “redeployment of workers at risk of unemployment” and “retain(s) income and purchasing power in the affected areas.”¹²⁴

Social inclusiveness

On the global level, social inclusiveness refers to equity principles, meaningful participation of developing countries, technological transfer, capacity-building, and financial assistance of industrialised countries.¹²⁵ Hence, all countries must participate in the governance of fossil fuels and finance flows need to take into account local priorities and limitations.¹²⁶ On the regional level, fossil fuel resources must be shared equitably.¹²⁷ On the national and local level, it focuses on marginalised communities and sectors.¹²⁸ Social inclusiveness requires: a) the adoption of equity principles for an equitable distribution of development benefits, b) the inclusion of the knowledge of the marginalized in development, c) the inclusion of the marginalized in governance processes, d) the protection of marginalized, and e) capacity building so that poor enjoy development benefits.¹²⁹

¹¹⁷ Jenkins, K. et al., “Energy justice: a conceptual view,” *Energy Research & Social Science*, no. 11, 2016.

¹¹⁸ Sokołowski, M.M. & Kurokawa, S., “Energy justice in Japan’s energy transition: pillars of just 2050 carbon neutrality,” *The Journal of World Energy Law & Business*, no. 15(3), 2022.

¹¹⁹ GIZ & adelphi, “From Growth to Wellbeing - by GIZ & partners. Factsheet for podcast: Just transition,” 2022, p. 3.

¹²⁰ United Nations, What is renewable energy?, <https://www.un.org/en/climatechange/what-is-renewable-energy> (accessed July 28 2023).

¹²¹ Hazrati, M. & Heffron, R.J., “Conceptualising restorative justice in the energy Transition: Changing the perspectives of fossil fuels,” *Energy Research & Social Science*, no. 78, 2021.

¹²² Ibid.

¹²³ IISD & GSI, “Real People, Real Change – Strategies for Just Energy Transitions (iisd.org),” 2018.

¹²⁴ Ibid, p. 14.

¹²⁵ Gupta, J. & Vegelin, C., “Sustainable development goals and inclusive development,” *International Environmental Agreements: Politics, Law & Economic*, no. 16, 2016.

¹²⁶ Gupta, J., Pouw, N., & Ros-Tonen, M., “Towards an elaborated theory of inclusive development,” *The European Journal of Development Research* 27, 2015; Gough, I. & McGregor, J.A., “Wellbeing in developing countries: from theory to research,” (2007). Cambridge University Press.

¹²⁷ Gupta & Vegelin, 2016, *ibid*.

¹²⁸ Ibid.

¹²⁹ Ibid.

Social and labour transition

Social and labour transitions are key in various ministries to address the “provision of income support, social service delivery to the most vulnerable (...), active labour market policies for redundant workers, retaining, and (...) broader regional economic revitalization plans.”¹³⁰

Social justice

Social justice confronts the status quo by dealing with fairness, inequality, and deprivation issues through social redistribution.¹³¹ The concept is relevant to a coal phase-out as it concerns changes in the present social and economic relations to halt environmental damage caused by fossil fuel burning.¹³²

Social protection

Social protection systems such as policies and programmes seek to help people, especially vulnerable, marginalised, and poor people to overcome crisis, find jobs and trainings, protect the aging population, and invest in education and good health. The aim of social protection measures is to reduce inequalities, building resilience and end inter-generational cycles of poverty.¹³³

Stranded assets

Stranded assets are commonly understood as “assets that have suffered from unanticipated or premature write-downs, devaluations or conversion to liabilities.”¹³⁴

Different types of stranded assets from an inclusive development perspective:

a. Physical stranded assets

“Physical” stranded assets refer to fossil fuel infrastructure and machinery when production halts and when fossil fuel infrastructure can no longer be commercialized.¹³⁵ These types of stranded assets are likely to threaten the environment and natural habitat through local pollution and ecosystem disruption. In the process of a Just Energy Transition, it is crucial to adequately decommission fossil fuel infrastructure disruption. Decommissioning of coal-fired power stations can prevent water, soil, and air pollution.¹³⁶

b. Financial stranded assets

Financial risks for asset owners, financial institutions, and governments due to the overstated valuation of multinational fossil fuel companies. Natural stranded assets result in less valuable multinational fossil fuel companies because capital markets allocate a positive value to fossil fuel reserves.¹³⁷ Hansen (2022, p.2) shows that “[fossil fuel] reserves will suffer a devaluation of 37%-50% amounting to 13-17 trillion”.¹³⁸ Notably, three-quarters of these financial stranded assets are owned by governments.¹³⁹ Gradually phasing out fossil fuels will result in lost revenues like equity

¹³⁰ Stanley, M. C. et al., “Managing coal mine closure: Achieving a just transition for all,” Washington, D.C.: World Bank Group, 2018, p. 31.

¹³¹ Rawls, J., “A theory of justice,” Cambridge, MA: Harvard University Press, 1971; Scott, D. & Oelofse, C., “Social and environmental justice in South African cities: Including ‘invisible stakeholders’ in environmental assessment procedures,” *Journal of Environmental Planning & Management*, no. 48(3), 2007.

¹³² Ibid.

¹³³ The World Bank, “Social Protection,” Social Protection (worldbank.org), n.d. (accessed May 11, 2023).

¹³⁴ Caldecott, B. et al., “Stranded Assets and Scenarios – Discussion paper”, SSEE & University of Oxford, 2014. (accessed July 28 2023)

¹³⁵ Caldecott, B. et al., “Stranded assets in agriculture: protecting value from environment-related risks”, *Oxford University Press*, 2013; Rempel, A. & Gupta, J., “Fossil fuels, stranded assets and COVID-19: Imagining an inclusive & transformative recovery,” *World Development*, no. 146, 2021.

¹³⁶ Ibid.

¹³⁷ Bebbington, J. et al., “Fossil fuel reserves and resources reporting and unburnable carbon: Investigating conflicting accounts,” *Critical Perspectives on Accounting*, no. 66, 2020.

¹³⁸ Hansen, T.A., “Stranded assets and reduced profits: Analyzing the economic underpinning of the fossil fuel industry’s resistance to climate stabilization,” *Renewable & Sustainable Energy Reviews*, no. 158, 2022, p. 2.

¹³⁹ Ibid.

and debt for developing economies,¹⁴⁰ creating political barriers to transitioning.¹⁴¹ Ownership distribution of financial stranded assets is to date poorly understood.¹⁴² It is relevant to consider as financial stranded assets could disrupt stability and security.¹⁴³

c. Human stranded assets

“Human” stranded assets refer to expertise and jobs within the fossil fuel and related sectors.¹⁴⁴ Gradually phasing out fossil fuels such as coal can lead to increased unemployment.¹⁴⁵ As a result, local protests could emerge due to disruption to the status quo.¹⁴⁶

d. Social stranded assets

“Social” stranded assets concern communities and networks that depend on fossil fuels. Phasing out fossil fuels risks that communities get dismantled if not adequately managed.¹⁴⁷

Sustainable development

Sustainable development refers to “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.¹⁴⁸ It strives to meet human

development goals without deteriorating natural systems to create a sustainable future by focusing on environmental, social, and economic dimensions.¹⁴⁹

Sustainable Development Goals

The 17 Sustainable Development Goals (SDGs) were established in 2015 by the UN and ensure future prosperity and peace for humanity.¹⁵⁰ SDG 7 “affordable and clean energy”, SDG 8 “decent work and economic growth”, and SDG 13 “climate actions” are just to name a few that are relevant for a just energy transition.¹⁵¹ However, sustainable development has been criticised due to its potential trade-off of nature and collective well-being in favour of economic growth and employment.¹⁵²

Technical mine closure

Mine closure is multifaceted. It creates a “disruption of the coal mining sector, catching governments, companies, coal workers, and communities unprepared to address the sudden shock.”¹⁵³ Therefore, engagement with communities and support regarding post-mining community resilience is a key aspect to consider.¹⁵⁴ Mine closure is about mitigating impacts on individuals and

¹⁴⁰ Caldecott, B. et al., “Stranded assets in agriculture: protecting value from environment-related risks,” Oxford University Press, 2013.

¹⁴¹ Hansen, T.A., 2022, *ibid*.

¹⁴² Semieniuk, G. et al., “Stranded fossil-fuel assets translate to major losses for investors in advanced economies,” *Nature Climate Change*, no. 12, 2022.

¹⁴³ Helm, D., “Burn out: The endgame for fossil fuels,” Yale University Press, 2017; van de Graaf, T., “Battling for a shrinking market: Oil producers, the renewables revolution, and the risks of stranded assets,” *Lecture Notes on Energy*, no. 61, 2018.

¹⁴⁴ Caldecott, B. et al., “Stranded assets in agriculture: protecting value from environment-related risks,” Oxford University Press, 2013.

¹⁴⁵ Caldecott et al. *ibid*.; Rempel, A. & Gupta, J., “Fossil fuels, stranded assets and COVID-19: Imagining an inclusive & transformative recovery,” *World Development*, no. 146, 2021.

¹⁴⁶ Bos, K. & Gupta, J., “Stranded assets and stranded resources: Implications for climate change mitigation and global sustainable development,” *Energy Research & Social Science*, no. 56, 2019.

¹⁴⁷ Caldecott et al., 2013, *ibid*; Rempel & Gupta, 2021, *ibid*.

¹⁴⁸ BCR, “Report of the World Commission on Environment and Development: Our common future,” <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>, 1987, p. 38.

¹⁴⁹ *Ibid*.

¹⁵⁰ UN SDGs, “Sustainable development goals,” THE 17 GOALS | Sustainable Development (un.org), n.d. (accessed May 11, 2023).

¹⁵¹ *Ibid*.

¹⁵² Gupta, J., Pouw, N.R., & Ros-Tonen, M.A., “Towards an elaborated theory of inclusive development,” (2015), *ibid*; Gupta, J. & Vegelin, C., “Sustainable development goals and inclusive development,” (2016), *ibid*.

¹⁵³ Stanley, M. C. et al., “Managing coal mine closure: Achieving a just transition for all,” Washington, D.C.: World Bank Group, 2018, p. 10.

¹⁵⁴ IGF, “IGF case study: Inclusive closure and post-mining transition at the Golden Pride Mine, Tanzania,” 2022.

communities,¹⁵⁵ while making sure that it is environmentally sound.¹⁵⁶

Transformation

Transformation can be defined as “the altering of fundamental attributes of a system (including value systems; regulatory, legislative, or bureaucratic regimes; financial institutions; and technological or biological systems).”¹⁵⁷

Ubuntu

The notion of ubuntu or botho is an African world view that stands for humanism or humanness, referring to “a spiritual foundation, an inner state, an orientation, and a good disposition that motivates, challenges and make one perceive, feel and act in a humane way towards others”.¹⁵⁸ In other words, it manifests itself in harmonious relations between people.¹⁵⁹

UNFCCC Paris Climate Agreement

The Paris Agreement is a pact where 197 nations committed to reducing greenhouse gas emissions (GHGs) by keeping temperature increase to below 2°C and to attempt limiting global warming to below 1.5°C.¹⁶⁰

Vulnerability

Vulnerability means the predisposition to be adversely affected.¹⁶¹

¹⁵⁵ Stanley, M. C. et al., 2018, *ibid.*, p. 19.

¹⁵⁶ IGF, 2022, *ibid.*

¹⁵⁷ IPCC, “Glossary of terms,” 2016, p. 564.

¹⁵⁸ Mnyaka, M. & Motlhabi, M., “The African concept of ubuntu/botho and its socio-moral significance,” *Black theology*, no. 3(2), 2005, p. 218.

¹⁵⁹ *Ibid.*

¹⁶⁰ UNFCCC, “What is the Paris Agreement?”, The Paris Agreement | UNFCCC, n.d. (accessed May 11, 2023).

¹⁶¹ IPCC, “Glossary of terms,” 2016, *ibid.*, p. 564.

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