

# *Corporate Social Responsibility and Governance of Hydropower – New Challenges in Energy Economics and Policy*

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Nations are increasingly committed to energy transition, be it directly through their own energy and climate policies or indirectly when implementing the United Nations' sustainable development goals (SDGs). In this frame, the decarbonisation of energy systems as well as, in some countries, phasing out nuclear energy are the main goals of contemporary energy transition, along with the SDG of ensuring access to affordable, reliable, sustainable and modern energy for all. Altogether, this calls for structural changes in our energy system: changes with regard to the mix of energy carriers and technologies, as well as institutional changes. The latter involve new policy instruments in addition to changes in market design, governance and property rights. Regarding economic analyses and policy appraisals, these issues are to be integrated in a comprehensive approach of sustainable development. Epistemologically, this calls for new approaches that combine procedural with consequentialist thinking in an economic world characterized by imperfect competition, externalities and distributional conflicts. In addition, it implies interfaces between the firm, economy and societal level and requires an extension of traditional methods in an interdisciplinary setting with strong disciplinary foundations, e.g., in welfare economic theory.

This can be illustrated with the case of hydropower. The latter is to play a key role in the energy transition, especially in mountain areas. Though it is a clean and renewable source of energy, hydropower is not undisputed. Indeed, it can entail substantial impacts on the environment, economy and society. Accordingly, hydropower must be evaluated from a perspective of sustainable development. This involves the evaluation of tradeoffs across the various goals in the social, economic and environmental spheres (Barbier, 1987). For this purpose, new approaches emerged over the past decades. First, on a project and policy level, sustainability assessment is as a new and complementary tool to the established methods of project appraisal, such as environmental impact assessment, life-cycle assessment and cost-benefit analysis, etc. (e.g., Gasparotos et al., 2007). Second, corporate social responsibility (CSR) is the principle frequently applied to integrate the issues of sustainable development into corporate decision-making (McWilliams and Siegel, 2001; McWilliams, 2014).

Though, CSR can be key in this regard, no theoretical basis exists that is common to the various approaches that evolved in practice and in the business ethics, management and economics literature. The latter is either intimately linked to CSR as a strategic management approach (e.g., Bagnoli and Watts,

2003; Baron, 2007; Porter and Kramer, 2006) or to its welfare-economic foundations (e.g., Arrow, 1973; Beltratti, 2005; Heal, 2005; Hediger, 2010). In a comprehensive approach of sustainable development and a modern theory of the firm, these two streams of thought must be combined, such as to align process and outcome orientation in an over-arching governance approach. The latter generally refers to the structures and processes "designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation", and thus "represents the norms, values and rules of the game through which public affairs are managed in a manner that is transparent, participatory, inclusive and responsive" (UNESCO, 2018). Ultimately, this implicates new views on corporate and public governance, along with the integrated evaluation of corporate performances from a financial and societal perspective of sustainable development. CSR is a key principle for this purpose.

First, CSR is generally defined as the business world's commitment and contribution to sustainable development. Second, it implicates a shift away from the pure shareholder perspective of maximizing profits and corporate value to a broader understanding of operation that encompasses various conflicting goals and multi-stakeholder concerns. This does neither imply that a company must necessarily fulfil any normative criterion of sustainable development and behave in a socially responsible manner, nor does it make obsolete regulation and legislation about social rights and environmental standards. Rather, CSR calls for shared responsibility between the government and private businesses, a challenge that intimately applies to energy systems, in general, and hydropower, in particular. Indeed, the management of water resources is generally regarded as a joint responsibility of public and private actors (Rahaman and Varis, 2005). Accordingly, the challenge of CSR directly applies to activities in the hydropower industry (Hediger, 2018). The latter is likewise influenced by development of different energy markets and by the institutional settings in individual countries and at different locations. Hence, the strategies and performance of

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hydropower companies must be developed, evaluated and implemented in the concrete context of the prevailing economic, institutional, cultural, geographical and political spheres.

From a welfare-economic perspective, the externalities and distributional effects going along with corporate activities are core to the concept of CSR (Heal, 2005). Regarding hydropower, they particularly involve the socio-economic and environmental impacts of a firm's undertakings as well as the distribution of water resource rents, profits and taxes among different stakeholders and territorial entities (Hediger, 2018). Apparently, this includes issues of efficiency and equity that need to be addressed when evaluating hydropower projects and assessing the CSR performance of the companies involved. A fundamental concept in this regard is that of resource rent. It is defined as a surplus that results when converting a natural resource (e.g., waterpower) into a marketable product (e.g., electricity). Formally, this corresponds to the difference between the price of the good produced using the natural resource and the unit cost of turning that natural resource into this good (Hartwick and Olewiler, 1997). What remains after netting-out these costs is the value of the natural resource: here, the waterpower. In the first instance, this value (the water resource rent) flows as an income to the holder of property or use rights on that resource: the water. But, since hydropower is capital intensive, some share of the resource rent – i.e., the net revenue from hydropower operations – is also claimed by the capital owners, paid out as dividends or kept back for future investments. Thus, from a theoretical point of view, dividends, royalties and corporate taxes are elements of revenue sharing among different stakeholders rather than cost factors. Accordingly, the CSR framework must explicitly reflect the distribution of resource rents through royalties, dividends and corporate taxes. The regulation of this revenue distribution is an issue of political economics, and cannot exclusively be based on efficiency considerations.

In this context, one must also recognize that social responsibility, transparency and accountability are core sustainability principles (IHA, 2010) that are further involved with the concepts of CSR and corporate governance. The latter involves the classic problems between owners and managers, as well as problems between owners themselves and between stakeholders (Beltratti, 2005; Shleifer and Vishny, 1997; Tirole, 2001). Such problems result whenever some agents coordinate their actions in order to increase their benefits at the expense of other stakeholders' benefits. Thus, corporate governance and CSR are complementary. They can reinforce each other in a modern vision of the firm as an institution that accounts for rather than disregards its impacts on society when searching to increase its corporate value.

Formally, CSR is the key principle to integrate the above concerns in a coherent way. It implies a

translation of the normative framework of sustainable development to the corporate level and must account for the impacts of corporate activities on the economy, society and environment. Hediger (2010, 2018) provides a generic framework that formally integrates in a welfare-economic framework the corporate and societal perspectives of a firm's activities, in general, and of hydropower companies, in particular. With the welfare-economic foundation of CSR, we explicitly account for externalities and distributional concerns. Those are above all important when it comes to decisions about investments in hydropower plants from both a corporate and societal (governmental) point of view and the sharing of revenues among different constituencies and territories. Ultimately, this involves the direct and indirect financial incidence through the distribution of dividends, royalties and taxes among the different state entities, which is particularly important in federalist or hierarchically structured political systems.

Building on this background, one can firmly show that investment decisions should not exclusively be based on financial considerations. Societal and wider economic aspects must also be taken into account. Nonetheless, from an economic and societal perspective, investment decisions are primarily to be taken for allocation (efficiency) reasons, rather than involve distributional concerns in the first instance.

Hence, investments into retrofitting and new hydropower plants should be undertaken as long as the total value of hydropower – i.e., its private and external value – exceeds the cost of investment, even if electricity prices and the profitability of such plants are low. Moreover, discussions about the distribution of resource rents and the granting of hydropower concessions must involve a political-economic discourse about the governance and ownership structure of hydropower companies, as well as investments by public entities and philanthropic investors who also care about the societal values of hydropower. This is justified by the fact that CSR calls for shared responsibility between the government (or the regulator) and private businesses running hydropower plants.

Altogether, CSR is a core principle in designing future governance of hydropower, in particular, and energy systems, in general. Above all, this involves the assessment of corporate and an energy systems' contributions to sustainable development, respectively, as well as issues related to market structure, property rights and the distribution of (water) resource rents. Altogether, this shall support better informed decision making on both corporate and policy levels, especially regarding investments in hydropower and wider energy systems, when social concerns are at stake and when discussing alternative energy policy options.

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