

The cost-recovery and bankability of infrastructure contracts must also be tackled at the regional level. For example facilitating cross-border power purchase agreements requires the alignment of national pricing structures, with implications in terms of subsidising domestic state-owned operators in those sectors, as well as aligning the respective responsibilities of domestic sector regulators. The Mmamabula Energy Project (MEP), a planned power station and integrated coal mine project in Botswana intended to provide power to South Africa, is for instance currently on hold due to regulatory changes regarding PPAs in South Africa – and this despite the MEP being the most advanced independent power producer project that can meet the South African demand for energy in the medium term. Conversely during the preparation phase of the Ruzizi III Hydro Power Project (involving the DRC, Rwanda and Burundi), off-take agreements have been negotiated with the three national utilities, purchasing one-third of the power each. There has been a strong level of commitment and co-operation among the countries to date, facilitated by equal stakes and off-take agreements, and by a supportive regulatory framework.

6.2. Infrastructure sector regulators

Infrastructure pricing can be the responsibility of line ministries charged with the relevant infrastructure sector, or can be delegated to sector-specific regulatory agencies. In the water sector for instance, the dominant approach is for utilities to propose tariff changes and the responsible public authority, which then approves or rejects the price change. The extent to which regulators can make their decisions independently of direct ministerial or SOE control can strongly influence the quality of firm operations, and has a considerable impact on the ability and likelihood of private investors to participate in utility markets. In some cases (as in the electricity sector in Mauritius) the state-owned utility and the regulator are one and the same. However most countries considered in this study have established sector regulatory authorities that are separate from the SOEs in the same sector, or are in the process of doing so. For instance as part of opening its economy to foreign investment, Vietnam had established regulatory agencies in all infrastructure sectors by 2008 (Vietnam 2009). Likewise in Tanzania semi-autonomous sectoral regulatory authorities such as TANROADS (for road transport), TCRA (for telecommunications), EWURA (in the energy and water sectors), and SUMATRA (for surface and marine transport) have existed since 2008 to promote fair competition and to protect consumers.

The extent of regulatory reform, and the degree of independence of infrastructure regulators, differs considerably across infrastructure sectors, and even across sub-sectors in the case of transport (see Table 6.2 on the following pages). Typically, the ICT sector has benefited from more reforms towards independent regulation, which seem to have generated increased private participation. By contrast regulatory independence has been rare in the energy and water sectors of many countries, although an increasing number of these (such as Mauritius and Botswana) plan to move towards the establishment of better empowered electricity and water regulators. There is also a gradual move towards multi-sector regulators, as a way to limit risks of political capture by one specific industry.

Countries are also reviewing the autonomy of existing regulators in terms of calculating electricity tariffs, and subjecting SOEs to stricter performance targets. For instance in Tanzania where electricity tariffs rose by 70% over 2008-2012 on demand of the national utility TANESCO, but with no corresponding service improvements, the regulator EWURA has refused more recent demands for tariff increases and is updating its cost calculation methodology rather than relying on TANESCO estimates. Similarly in Zambia, the Energy Regulation Board has recently established Key Performance Indicators in order to directly condition tariff increases on the performance of the utility ZESCO.

Nevertheless even in the ICT sector, many regulators remain under some form of ministerial control – they are not immune from political pressure exercised through their host ministries. In Botswana although it is functionally and financially independent, the Botswana Telecommunications Authority reports its strategic plans and annual operations to the Minister of Transport and Communications; this gives the

Minister a potential veto on its decisions, especially as BTA Board members are selected by the Minister. Similarly the Malaysian Communications and Multimedia Commission (MCMC) oversees the licensing process but the sector minister has ultimate approval power, and in Indonesia all resolutions of the ICT regulator must be issued by the relevant Ministry.

In Zambia while the 1994 Telecommunications Act opened the sector to private capital and created a sector regulator for several years, the latter was overseen by the same ministry as the public utility ZAMTEL, and reportedly provided a regulatory environment that favoured the SOE. As a result private investor interest was low and ZAMTEL remained the main operator for over a decade. It was only with the creation of an independent regulatory authority (ZICTA) in 2009 that the investment environment truly became competitive and attractive for private operators: Zambia now counts three ICT operators, and a fourth may enter the market soon (Zambia 2012). The ICT regulatory structure in Morocco has known similar success: the new regulatory system and introduction of competition in mobile telephony, supervised by the independent National Telecommunications Regulation Agency, led to a tripling of investment from 1998 to 2007 and greatly improved services.

The OECD's Regulatory Policy Committee and its subsidiary body, the Network of Economic Regulators, provide guidance on how governments can support improvements in regulatory practice over time, and strengthen the legitimacy of regulation. The 2013 *OECD Principles for the Governance of Regulators* detail the factors to consider in creating an independent and structurally separate regulatory body. Independent regulatory decision-making, at arm's length from the political process, is likely to be appropriate where both government and non-government entities are regulated under the same framework. This is the case of most infrastructure markets, and competitive neutrality is therefore required. Effective independence will be ensured through a combination of *de jure* elements (founding legislation) and *de facto* factors (such as sources of financing or employment modalities). Moreover the organisational, financial and decision-making autonomy of regulators situated within a Ministry should be safeguarded by provisions in their empowering legislation; and where legislation empowers the Minister to direct an independent regulator, the limits of the power to direct the regulator should be clearly set out.

6.3 Key policy take-aways

- Given the nature of infrastructure sectors, whereby decisions of the regulator can have a significant impact on particular interests and there is a need to protect its impartiality, sectors should have regulators (whether multi-sectoral or sector-specific) that are independent of incumbent operators and free from interference by sector ministries. The regulator should be responsible for setting tariffs in a transparent manner, involving public consultation.
- Tariff setting should strike a balance between the imperative of end-user affordability and the need for cost-recovery. Governments should attempt to use a wide range of sources of end-user finance for infrastructure. ICT and transport can often be fully financed through user charges and fees. By contrast in the electricity as well as the water and sanitation sectors, it is unlikely that user charges can fully cover capital investment costs. While access to these services should be partly financed by government to ensure minimum access for households, the impact and targeting of consumption subsidies should be regularly assessed, the 'user-pays' principle and stepped tariffs can be applied, and modest user charges could be used even at low income levels to avoid waste. Finally tariffs should be adjusted regularly to reflect changes in costs of operation and maintenance, and could include automatic annual adjustments for inflation.

- The total fiscal cost of production subsidies to state-owned utility providers should be regularly assessed, and if possible reduced or replaced by well-targeted consumption subsidies – as they place a high burden on the public purse, prevent SOEs from operating according to commercial incentives, and place private operators seeking to enter the market on an unequal footing vis-à-vis these SOEs.
- In the case of cross-border projects, pricing structures need to be aligned among countries; this may include Memoranda of Understanding across country sector regulators, as well as mutually agreed service purchasing arrangements (such as Power Purchasing Agreements, PPAs, in the case of power projects; or agreed toll rates for transport projects).

Table 6.2: Trends for infrastructure regulation and tariff-setting in infrastructure sectors of selected economies

Sector	Functions & independence of infrastructure regulator	Tariff-setting: affordability and cost-recovery considerations
ICT	<p>In Botswana, the Telecommunications Acts of 1996 established the Botswana Telecommunications Authority (BTA) as the sector regulator, with the mandate to: set and approve tariffs; award licenses; charge licensing and other regulatory fees; resolve disputes among operators; monitor service quality; and protect consumer interests.</p> <p>The Indonesian Telecommunications Regulatory Body (BRTI) became effective in 2004, as an independent agency to ensure a transparent and competitive telecommunications sector. Numerous experts have questioned the degree of independence of the BRTI, especially given that the Director General of Posts and Telecommunications is the ex officio chairman of the BRTI. Furthermore, the BRTI has no independent authority to issue resolutions but must do so instead through the Ministry.</p> <p>In Costa Rica, the Superintendencia de Telecomunicaciones (SUTEL) has been an independent regulator since 2008, and has issued regulations on interconnection, competition, universal service, frequency allocation and other relevant matters, all of which have been published in the Official Gazette.</p> <p>In Egypt, the reform process started in 1998 with the establishment of an independent regulatory authority and the incorporation of the government-owned operator, Telecom Egypt.</p> <p>Myanmar has not yet begun to establish independent regulators except in the ICT sector. Currently, the competent regulatory entities in other sectors are often exposed to political influence and conflicts of interest due to the vertical relationship between regulators and operators, resulting, to a certain extent, in prices being set at uncompetitive</p>	<p>Mobile ICT technologies are not considered to be a basic need and thus fee schedules could be set at cost-recovery levels and include a margin to generate a return on capital.</p> <p>Tariff setting in the ICT sector in most countries has been targeted at attracting investment into the mobile telephony sector with positive results.</p> <p>In Zambia ZICTA is empowered to approve all tariffs charged by ICT service providers. It also regularly monitors and evaluates whether telecommunication pricing policies are competitive, and whether they favour investment in industries that depend on reliable and affordable telecommunications. One of the provisions of the ICT Act also places an obligation on ZICTA to publish guidelines on the definition of the electronic communication market and approved rates in the daily newspapers. It also carries out evaluations of license-holders perceived to hold a dominant position in the market.</p>

	<p>levels in many sectors (Myanmar 2014).</p> <p>Mozambique was the first country in the Southern African region to reform its telecommunications sector. In 1992 the National Telecommunications Institute of Mozambique (INCM) was established as a regulatory body with oversight over both telecommunications and the postal service. INCM responsibilities include tariff proposals, frequency allocation, monitoring service quality and establishing licensing fees.</p>	
<p>Energy</p>	<p>In the Nigerian power sector, the Nigerian Electricity Regulatory Commission (NERC) promotes competition and private sector participation in the sector; establishes operating codes and safety and quality standards; establishes consumer rights and obligations with respect to the provision and use of electricity services; and licenses and regulates those involved in the generation, transmission, system operation, distribution and trading of electricity (Nigeria 2014).</p> <p>In Mauritius since 1964, the Central Electricity Board (CEB, wholly government-owned) has been the primary body responsible for regulation and pricing of the electricity sector. It also holds a monopoly in distribution and transmission of electricity, under the 'single-buyer model' of electricity provision. This dual function risks creating some conflict of interest. The situation has generated increasing calls for amending the Electricity Act of 1939, and creating a Utility Regulatory Agency to take over the CEB's regulatory role.</p> <p>In Mozambique CNELEC is the sector regulator with authority to: set tariffs and approve concessions; undertake mediation and arbitration functions for disputes that arise between the government and its contractors; and monitor the performance contract between the government and the SOE, EDM.</p> <p>In 2010, Ukraine became a member of the European Energy Community. This entailed a commitment to strengthen the prerogatives and independence of the National Electricity Regulatory Commission (NERC) in line with EU rules. As a result, the NERC now issues licenses for all activities in the electricity sector, including power generation, distribution and supply to end-users, as well as transport of oil and oil products, and gas transport, storage, distribution and supply. NERC sets wholesale electricity prices and establishes retail electricity tariffs, sets the caps on gas prices, and fees for delivering, transporting and storing gas, oil and oil products. Yet the independence of the NERC has been constrained due notably to the modalities by which the chairmen and commissioners are appointed (Ukraine 2011).</p> <p>In Russia the electricity market is regulated by the Federal Tariff Service (FTS) and the Federal</p>	<p>In Botswana in the interest of affordability, tariffs are set differentially across five consumer groups (domestic; small businesses; medium businesses; large businesses; government; and water pumping), based on the amount of electricity consumed and adjusted through a combination of fixed and variable charges. Low tariffs have prevented the state-owned BPC from reaching full cost-recovery, requiring it to have recourse to substantial government subsidies in 2011 and 2012 to stay afloat.</p> <p>In Costa Rica, tariff revenues at present do not cover operations and maintenance costs. Consumers in San Jose cross-subsidise those in other cities. A tariff regime based on block tariffs, where higher consumption bands are charged higher rates, is in force.</p> <p>In Indonesia, electricity tariffs will continue to be set by the government and approved by Parliament, but a new Law allows for regional variations. Private power producers must apply tariffs which are in line with central or regional government stipulations, however. In 2009, the subsidy for electricity alone was almost USD 6 billion. The government expects to reduce the subsidy for electricity and to ensure that they go to those most in need of them: the poor and small-scale industries. It has ceased paying subsidies to larger industrial electricity consumers.</p> <p>In Mauritius as from December 2010, tariffs vary by three thresholds of declared connected load. These different groups face different minimum charges and security deposits. Yet this pricing structure Remains suboptimal. Electricity tariff adjustments are made mainly on an ad-hoc basis and do not reflect full cost-recovery. Under-pricing costs are estimated to have reached close to 0.4% of GDP in 2006.</p> <p>In Zambia the Energy Regulation Act was introduced in 1995, and, inter alia, provided for the establishment of the Energy Regulation Board (ERB) in 1997. The ERB is the sole licensing authority for operators in all the energy sectors. Both the cost of producing power in Zambia and the tariffs charged to consumers, are some of the lowest in Africa, and not high enough for full cost-recovery, which has severely impeded private investment. The government's objective is to align electricity tariffs with economic costs of supply whilst</p>

	<p>Antimonopoly Service (FAS). FTS regulates most wholesale and retail electricity prices, with about 95% of electricity traded under the regulated regime and the rest traded on a wholesale market via bilateral contracts and a day-ahead, spot market overseen by the Administrator of Trading Systems (ATS). FTS also sets tariffs and charges for the transmission and distribution networks (Russia 2008).</p> <p>In Malaysia, the Energy Commission serves as the regulator for the electricity sector; it regulates retail tariffs while wholesale prices between TNB and IPPs are negotiated through bilateral agreements.</p>	<p>also enabling the state-owned utility ZESCO to invest in rehabilitation and expansion. The ERB has approved tariff increases of 17% in both 2010 and 2011, although less than requested by ZESCO. This is now beginning to attract private investors in power generation as the tariffs are becoming cost reflective, but additional revisions to the power tariff structure may be needed (Zambia 2012).</p>
<p>Transport</p>	<p>In India, the Civil Aviation Department within the Ministry of Transport regulates the airline industry. Major federal ports have been privatised and are regulated by their respective port authorities that are statutory bodies under the Ministry of Transport.</p> <p>In the Tanzanian transport sector, since 2004 public transport fares are managed by SUMATRA, with the aim of expanding availability to all consumers, including low-income, rural and disadvantaged groups. Increases in public transport fares thus depend on SUMATRA's approval.</p> <p>The Indonesian government plans to create a regulatory agency for ports, following which the government will no longer be responsible both for running and regulating the port system.</p> <p>In Malaysia, a legislative framework for the transport sector, including for regulating toll road charges, has been in place since 1987. In 2010, this was improved by legislation which rationalised the 15 public agencies previously involved in setting policy on public transport.</p> <p>In Botswana, all tendering and operations of the rail sector are directly managed by Botswana Railways, rather than by an independent agency. By contrast the air transport sector is regulated by the Civil Aviation Authority of Botswana (CAAB).</p> <p>In maritime ports, the government of India has recognised that the current regulatory framework limits ability to regulate tariffs on a cost-plus basis and needs to be expanded in view of a more effective model for awarding concessions. As part of the reform it established the Tariff Authority for Major Ports.</p> <p>Tanzania and Zambia have enhanced the financial sustainability of road infrastructure projects by establishing "second generation road funds", whereby management is transferred from a ministry to an autonomous road agency in order to improve project management and to ensure that road</p>	<p>Rehabilitation and management contracts for existing roads are frequently based on the performance based procurement model, with revenue provided from dedicated road funds financed, inter alia, by fuel taxes, and vehicle registration fees. In the road transport sector, toll roads for limited access thoroughfares, have helped attract private sector investment and reduce bottlenecks. Affordability concerns are largely met by assuring that parallel roads continue to be maintained for the use of those users for whom speed is less important than cost.</p> <p>BRT systems are often considered as cost-efficient "quick-wins" because their profitability and high social benefits deliver results in the short run for sustainable transport. BRT capital costs are much lower than for metros or light rail transit systems. Moreover, cost recovery is usually good since BRTs are typically set up on traffic corridors with high passenger volumes. Revenues from BRT systems can sometimes cover operational costs without requiring subsidies.</p> <p>In Indonesia, a Toll Road Regulatory Agency (BPJT) was created in 2004, and is responsible for regulation, business management and monitoring of toll road enterprises. The BPJT recommends initial tariffs for toll roads and how they are to be adjusted over time. It also takes over toll roads at the end of their concessions or recommends the further operation of these toll roads by a private operator. To encourage toll road investment, it also prepares for the commercialisation of new projects, including by facilitating land acquisitions.</p> <p>In Mozambique which has attempted several BOT projects for rural road development, the viability of tolls on some roads, notably Vanduzi-Changara, is questionable, given the low income levels of the users in these mainly rural areas.</p>

	maintenance funds are appropriately used.	
Water and sanitation	<p>In Zambia legislation in 1997, provided for the establishment of an autonomous Regulator, the National Water Supply and Sanitation Council (NWASCO), to regulate water and sanitation providers for the efficiency, reliability and cost effectiveness of their services (Zambia 2012).</p> <p>In Mozambique CRA, the independent regulator for urban water supply, is in charge of regulating services, ensuring water quality, setting tariffs and mediating between the government and concessionaires. Meanwhile the Fund for Water Supply Investment and Assets (FIPAG) has been established as an asset-holding investment fund to promote investment and manage operations, rehabilitation and maintenance of water supply infrastructure.</p> <p>In Costa Rica, the <i>Instituto Costarricense de Acueductos y Alcantarillados (AyA)</i> is the main provider of drinking water supply and is also responsible for management of sewage systems. Some municipalities and two public enterprises also provide these services and manage water infrastructure in their respective areas. ARESEP serves as the sector regulator and, importantly, is in charge of approving water tariffs.</p> <p>In Jordan there is no independent regulatory institution for the sector although a regulatory body is planned by 2022, as well as a Water Council.</p>	<p>70% of water revenues collected from customers in Botswana are in effect subsidized, and tariffs are set according to an incremental scale. Separate tariffs are also in place for government agencies and town and district councils, who pay more than domestic and business users. Similarly to the energy sector, infrequent updating of tariffs has however impeded cost recovery in water operations. In Mauritius the water sector also functions based on stepped tariffs.</p> <p>In Jordan, cost recovery has been difficult and the government has therefore resolved to set municipal and wastewater charges at a level sufficient to cover operation and maintenance costs. Certain groups of consumers – in industry tourism, commerce and agriculture – pay a tariff reflecting the full cost of water service provision. A tariff increase was approved in 2010, but the Ministry of Water and Irrigation stated in June 2012 that tariffs would not increase further in the near future. Consumption subsidies, which currently cover 50-60% of the water bill, are expected to stay in place. The tariff increase of 2011, coupled with measures to reduce non-revenue water, should help meet the Ministry's goal of becoming revenue neutral by 2022 (GWI, 2010).</p> <p>In Tunisia, the state-owned water and sanitation utilities, SONEDE and ONAS, are not financially self-sustaining because of low water tariffs (which are very rarely revised, despite rising operation costs and inflation). Expansion of the sector is entirely dependent upon public finance.</p>

7. INVESTING IN LOW-CARBON INFRASTRUCTURE

7.1. Regulatory reform in the energy sector

When considering policy reform for attracting more private investment into infrastructure, it is crucial to consider the urgent need for green investment. Maintaining infrastructure investment in conventional, emissions-intensive technologies (i.e. under a 'business-as-usual' approach) would likely jeopardise future growth. Yet according to the Climate Policy Initiative, the global shortfall in climate change adaptation investment will range between USD 69 and 109 billion per year until 2030 (WEF, 2013). Given current strains on public finances, achieving the clean energy transition will entail leveraging both international and domestic private investment at scale.

Private investment in clean energy infrastructure however remains constrained by specific barriers. Governments have a key role to play in strengthening the enabling environment for clean energy infrastructure investment, across all fields of investment policy addressed in the preceding sections. As detailed in the 2013 *OECD Policy Guidance for Investment in Clean Energy Infrastructure*, applying investment policy principles such as non-discriminatory treatment of international clean energy investment, intellectual property protection, transparency, contract enforcement, and adequate property registration systems can considerably facilitate investment inflows in clean energy.

In Jordan following the adoption of the 2010 Law, Parliament passed significant amendments in 2012, including one that exempts all systems and equipment for renewable energy and energy efficiency purposes from customs duties and sales tax. Jordan has also established a Renewable Energy and Energy Efficiency Fund (REEEF) open to both national and foreign private companies which provides subsidies for privately owned and operated renewable energy facilities; interest rate subsidies on commercial loans used for related projects; a Public Equity Fund to support private investment; a renewable energy guarantee facility to ease credit access for project developers; and research and technical cooperation grants for targeted programmes and feasibility studies. The REEEF also offers risk-mitigation measures related to technology, regulatory, and weather risks (Jordan 2013).

Meanwhile in Costa Rica, further opening electricity market to the private sector is a main challenge to expanding clean power generation, and a number of bills were pending approval in the legislature in 2012 to address this issue. One of them would establish a regulated wholesale electric market, lifting the position of the national utility as dominant operator and enabling electricity services to be marketed through diverse legal modalities with private sector participation. To boost investment in solar energy, Costa Rica has also implemented a pilot “net metering” programme in 2010, enabling residential, commercial and industrial end users to install solar systems and sell excess capacity back into the grid (Costa Rica 2013).

On the investment promotion front, improving coherence of the broad system of investment incentives and disincentives can help level the playing field for clean energy investment and shift investment incentives away from conventional energy towards clean energy. For instance governments can: provide well-targeted and time-limited feed-in tariffs; set long-term goals for making the clean energy transition; facilitate the licensing of renewable energy projects; remove inefficient fossil-fuel subsidies; and put a price on carbon through the use of carbon taxes and emission trading schemes. As of 2014, several of the countries covered in this report have introduced feed-in tariffs (FITs), among others Malaysia, Nigeria, Botswana, Indonesia, Jordan, India, China, Ukraine, and Turkey (PV Tech, 2014). However FITs do have drawbacks, as pricing is complex and setting the price too high can lead to over-investment and a surge in electricity prices. Government capacity to accurately calculate the price of FITs needs to be reinforced in the majority of developing countries.

Alongside FITs, various fiscal incentives (such as tax credits, tax exemptions, tax reductions, or accelerated depreciation) can be put in place to decrease the investment costs of renewables and attract investors. Direct investment grants can also be useful when the relevant technology is still far from competitive, since other forms of financial assistance (such as loans and tax breaks) may not suffice to guarantee economical operation. It is however more difficult to make these grants conditional on performance or on the extent to which the renewable energy installation operates. As for all investment incentives, it is imperative to accompany such incentive schemes and grants with a mechanism for regularly evaluating their costs and benefits.

In Malaysia other mechanisms to support investment in renewable energies and other green initiatives include various investment funds, private financing, and making use of the Clean Development Mechanism (CDM) and development assistance. Other countries having made use of the CDM to finance renewable energy infrastructure include China, Colombia, Costa Rica, India, Indonesia, Egypt, Jordan, Malaysia, Mauritius, Morocco, Myanmar, Nigeria, Peru, Tanzania, Tunisia, Viet Nam, and Zambia (CDM Data Base).

In addition, Power Purchasing Agreements (PPAs) between independent power producers and electricity distribution firms can be designed so as to favour a greater share of renewables (rather than being set primarily according to least-cost criteria, as is often the case). Without addressing these concerns, renewable energy technologies cannot compete with the already established alternatives. In Tanzania, the

existing guidelines for Standard PPAs recommend that the latter be awarded on a least-cost criterion, thus inadvertently tilting the stakes in favour of conventional energy. In Nigeria, as in many developed and developing countries, the price of conventional energy (especially petroleum products and electricity) is subsidised (see section 5.6 on pricing). Both elements create barriers for renewable energies which cannot achieve a minimum level of market share (Nigeria 2014).

Alongside, tariff-setting must take into account the cost-recovery needs of renewable energy producers – and as for other infrastructure sectors, this can be at odds with affordability for end-users. Jordan has been juggling the imperatives of end-user affordability, fossil fuel subsidy reduction, and cost-recovery for several years. In 2008, the government completed a three-stage removal of fossil fuel subsidies. Considering that the cost of such subsidies is expected to increase by 60% in the next decade, this is a field which requires more government attention worldwide (IEA, 2011). The subsidy reform boosted clean energy generation by removing price distortions for conventional and clean fuels, and was also hailed for its compensatory measures that helped cushion consumers from rising living costs (OECD, 2010). However, protests in 2011 in parts of Jordan compelled the government to reverse some of these reforms.

More broadly, clean energy investment can be encouraged by publicising government commitments towards clean energy generation in national infrastructure plans, and ensuring that the related clean energy policies are predictable and compatible with WTO rules to reduce trade policy uncertainty. In the same vein, clear portfolio standards for clean energies could also help enhance the expansion of renewable energy. These standards can set minimum targets of clean energy content within the overall energy supply. As an example of such long-standing commitment and predictability, one of Costa Rica's priorities in the energy sector is to reduce its dependence on oil and other fossil fuels. The government is currently developing a strategy for importing natural gas as a potential substitute for oil products. Since the 1990s, electricity generation has been gradually opened to the private sector, especially in view of enhancing the share of solar, hydroelectric, wind, and geothermal energy in power generation (Costa Rica 2013). In turn, Malaysia plans to achieve market-based energy pricing by 2015, in part by eliminating energy subsidies. Box 10.1 below illustrates how countries can go further in promoting low-carbon energy systems by encouraging green investment in specific infrastructure sub-sectors, notably in mass transit.

Finally questions of energy market design and competition policy are also raised when considering the case of clean energy investment. As some of the above examples illustrate, creating a level playing field for IPPs and SOEs, and between national and foreign private actors, may be necessary in order to tackle market rigidities that favour fossil fuel incumbency in the electricity sector. Steps must also be taken toward establishing a wholesale electricity market that can accommodate increased renewable energy generation, and in which multiple actors can engage in electricity generation as well as transmission and distribution. Strengthening domestic financial markets and instruments for clean energy investment, and enhancing co-ordination among different parts and levels of government for the efficient design and implementation of clean energy policies and infrastructure projects, should also be priorities for country seeking to make the transition towards a cleaner energy system.

Box 10.1 Encouraging environmentally sustainable transport

Both Colombia and Malaysia have identified transport as one of the areas which present important opportunities for GHG mitigation. In Colombia the government developed the National Urban Transport Policy in 2003, under which large and medium-sized cities were to benefit from the implementation of Integrated Mass Transit systems (SITMs) and Strategic Public Transport Systems, respectively (Colombia 2012). Malaysia has prioritised the development of low carbon public transport such as light rail, making it a potential target for investment. Malaysia has used BOT concessions to secure private sector participation in the Light Railway Transit System I and II (Malaysia 2013).

As of November 2013 more than 166 cities had implemented Bus Rapid Transit (BRT) systems, accounting for 4

336 km (2 694 mi) of BRT lanes. About 27 million passengers use BRT worldwide daily. BRT systems are often considered as cost-efficient "quick-wins" because their profitability and high social benefits deliver results in the short run. BRT capital costs are much lower than for metros or light rail transit systems. Since BRTs are typically set up on transportation corridors with high passenger volumes, revenues can sometimes cover operational costs without requiring subsidies. A number of these systems are in operation or under construction in several of the countries examined in this report, namely, China, Colombia, India, Indonesia, Jordan, Nigeria, Peru, Tanzania, and Viet Nam. In Myanmar, Yangon authorities are planning to install a BRT which will include fixed fares, buses using compressed natural gas, specific bus stops, improved traffic lines, and tenders to allow for private operators (Myanmar 2013).

7.2 *Key policy take-aways*

- To create predictability and long-term visibility for renewable energy investors, establishing long-term carbon emission reduction objectives is necessary at national level. National GHG emission reduction objectives can powerfully complement carbon trading mechanisms. Long-term carbon reduction objectives can also be accompanied by an emission-reporting system to facilitate tracking and measuring progress, including at the local government level to stimulate small-scale renewable energy investments.
- Tariff-setting must take into account the cost-recovery needs of renewable energy producers. Likewise in order to attract these investors, Power Purchasing Arrangements (PPAs) should not automatically be set on a 'least-cost criterion' as this by default favours conventional energy producers; rather environmental criteria can also usefully be factored into such arrangements.
- Governments can create a more hospitable environment for clean energy investment by putting a clear, credible and long-term price on carbon emissions across the economy through market-based instruments such as emission trading schemes or carbon taxes. If a market-based mechanism is used to price carbon emissions, it should be introduced in a transparent and predictable manner, and designed to be resilient to price volatility and other broader macroeconomic changes.
- Governments should consider removing fossil-fuel consumption subsidies, and re-directing the fiscal resources towards more efficient ways of facilitating access for the poor (targeted redistribution programmes such as social safety nets, cash transfers, and life-line subsidies).
- Should governments choose to implement Feed-in-Tariffs (FITs), public capacity in their design must be raised. Moreover clarity needs to be given to investors as to when and on what basis the price of the tariff is susceptible to change; in this light, governments should endeavour to tackle information asymmetries between sector regulators and investing companies. When choosing to implement a FIT, attention should also be given to who bears the costs of the measures.
- Given the low capital costs and high profitability of Bus Rapid Transit (BRT) systems, more developing country governments should be establishing these systems – in addition to making urban transport more environmentally sustainable, this can help decongest major roads and ease traffic flow in growing urban centres.

ANNEX 1

OECD Guidance

- OECD Checklist for Public Action for Private Sector Participation in Water Infrastructure (2009)
- OECD Competition Assessment Toolkit (2007) updated in 2010
- OECD Recommendations on Competition Assessment
- OECD Principles on Corporate Governance
- OECD Guidelines on Corporate Governance of SOEs
- OECD Guide for State Ownership
- OECD Corporate Responsibility: Private Initiatives and Public Goals
- OECD Guidelines for Multinational Enterprises
- OECD Principles for Private Sector Participation in Infrastructure (2007)
- OECD Private Sector Participation in Water Infrastructure
- OECD Engaging the Private Sector in Support of a Low Carbon Future
- OECD Principles for Public Governance of Public-Private Partnerships (2012)
- OECD Recommendation on Regulatory Policy and Governance
- OECD Principles for Enhancing Integrity in Public Procurement
- OECD Guiding Principles for Regulatory Quality and Performance
- OECD Reference Checklist for Regulatory Decision-Making
- APEC-OECD Integrated Checklist on Regulatory Reform
- OECD 10 Good Practices for Regulatory Impact Analysis (RIA): Guidance for Policy Making (2007)
- Joint OECD/DAC World Bank Procurement Roundtable Initiative: Johannesburg Declaration (December 2004)
- OECD/DAC Methodology for Assessment of National Procurement Systems Version 4 (17 July, 2006)
- OECD Recommendations Concerning Structural Separation in Regulated Industries

OECD/DAC Methodology for Assessing Country Procurement Systems Using the Baseline Indicator Tool (BLI)

OECD Declaration on International Investment and Multinational Enterprises (includes “national treatment instrument”)

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