

Executive Summary

Over the past decade Vietnam has made spectacular progress in GDP growth and poverty reduction. Annual per capita growth has averaged 5.9%, the eighth highest in the world over the decade. Since 1990, poverty measured at the \$1 a day threshold has fallen from 51% of the population to just 8%.

A critical part of this success has been a high level of investment in infrastructure. Around 9-10% of GDP has been invested in transport, energy, telecommunications, water, and sanitation in recent years, a very high level of infrastructure investment by international standards. Microeconomic studies provide evidence of a strong link between this infrastructure investment and Vietnam's growth and poverty reduction.

The road network has more than doubled in length since 1990, and its quality has improved substantially. All urban areas and 88% of rural households have access to electricity. The number of fixed and mobile phones per 100 people has multiplied nine-fold since 1995. Access to improved water grew from 26% of the population to 49% between 1993 and 2002, and during the same time access to hygienic latrines grew from 10% to 25% of the population.

Vietnam's existing infrastructure strategy has been a success. And yet, the strategy needs to evolve and adapt as new challenges emerge.

Over the next five to ten years, official development assistance (ODA) is unlikely to grow at the same pace as the economy, and will thus occupy a smaller part of total infrastructure investment. Grants and the most concessional forms of donor financing will

become increasingly difficult to obtain as Vietnam's GDP per capita exceeds donor thresholds. In all infrastructure sectors, there is a need to develop new sources of long-term finance as alternatives to ODA. Much of that finance will need to come from financial markets or direct private finance, requiring reforms of consumer pricing, enterprise restructuring, and revised regulation to establish the credit-worthiness of infrastructure enterprises.

Urbanization is adding a million people per year to Vietnam's urban centers, providing not only a financing challenge to meet their infrastructure needs, but also a planning challenge to ensure that infrastructure provision is timely and avoids the need for expensive retro-fitting after urban areas are already settled.

In past years, Vietnam could be reasonably sure of high social returns on public investment by connecting consumers without access to infrastructure networks. But as access levels increase it will become more difficult to find investments with high rates of return, necessitating more refined planning systems. And as infrastructure networks expand the cost savings available from more efficient operation will increase, placing greater emphasis on tasks such as restructuring state-owned enterprises, equitization, or the introduction of greater competition, to provide stronger commercial incentives. The elimination of corruption would also have a significant impact on the costs of infrastructure services.

Vietnam's approach to the reduction of poverty has been one of general reliance on

growth, but with investments being geographically spread to ensure that all regions participate in that growth. Increasingly poverty is focused in remote rural areas, ethnic minority communities, and new areas of urban poverty arising from migration. As general poverty levels fall and infrastructure access increases, the existing approach to poverty reduction will need to be supplemented with approaches which more directly target individual households. Careful review across infrastructure sectors is required to determine how existing subsidies could be better targeted to address these new concentrations of poverty, without wasting poverty alleviation funds on the non-poor.

This report deals with cross-sectoral infrastructure issues. Chapter 1 sets out the emerging challenges that will require a revised approach to Vietnam’s infrastructure strategy - a reduction in ODA as a proportion of GDP, urbanization, the challenges of managing more extensive infrastructure networks, and changes in the nature of poverty in Vietnam. Chapters 2 to 5 set out the reform agenda required to address these new challenges, organized under

the themes of financing, planning, service efficiency, and poverty. Chapter 6 concludes with a discussion of reform prioritization.

The report is accompanied by five further volumes dealing with transport, electricity, telecommunications, water and sanitation, and urban development. This executive summary presents the main findings of all six volumes.

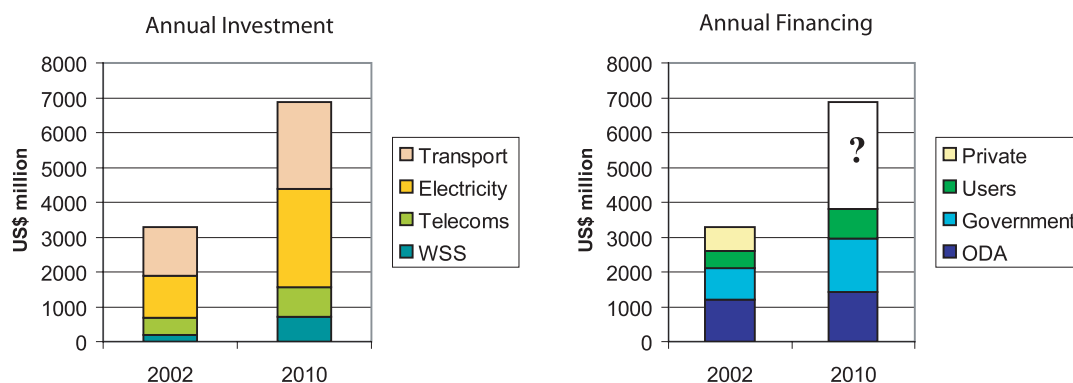
CROSS-SECTORAL ISSUES

1. Investment Needs and Financing

Infrastructure investment in 2002 represented about 9.4% of GDP. Looking to the future, sectoral plans and forecasts suggest future annual infrastructure investment summing to 11.4% of GDP, an increase of 2% of GDP over recent levels:¹

- In September 2005, the Ministry of Transport estimated future financing needs in a Medium Term Expenditure Framework, which matched proposed investment with potential financing sources. The proposals for capital spending in 2006 to 2008 amounted to VND 69,186 billion (US\$ 4.3

Figure 1: An Emerging Gap between Investment Plans and Available Financing



Source: For investment in 2002 see Table 2.1, for investment plans in 2010 see text in section 2.1, for financing sources in 2002 see Table 2.2. Financing sources for 2010 assume that ODA grows at 2% p.a., while government and user financing (retained earnings) grow at the same pace as GDP (7% p.a.) from their 2002 levels.

1. In 2005, 2% of GDP was about VND 15,250 billion (US\$ 966 million). Estimates of investment as a proportion of GDP assume that GDP grows at 7% annually.

billion) over the three years, and averaged 4.1% of GDP per year.

- In the electricity sector, investments required to meet the Fifth Power Master Plan amount to VND 215,078 billion (US\$ 13,743 million) in the years 2005-2010, or about 3.9% of GDP. This figure is now regarded as an underestimate, because of higher than expected demand growth in recent years. The financial model used by EVN to plan future investments suggests that during 2005-2010 capital expenditure will amount to VND 237,246 billion (US\$ 16 billion), which in annual terms is about 4.7% of GDP.
- In the water and sanitation sector the Government has set coverage targets to achieve its 2010 development goals. The targets are 85% for urban water and sanitation, and 75% for rural water and sanitation, which would require investment of VND 57,547 billion (US\$ 3.62 billion) during 2005-2010, or 1.2% of GDP annually.
- In the telecommunications sector, in October 2005 the Ministry of Post and Telematics adopted a target of 32-42 total telephone lines per 100 population by 2010. To achieve 35 lines per 100 population would require about VND 57,000 billion (US\$ 3.6 billion). Spread over the period 2006-2010, this would amount to around 1.4% of GDP annually.

The forecasts should not be interpreted as an endorsement of sectoral investment proposals. Closer analysis of the individual sector plans may find ways of economizing on investments, increases in user tariffs could reduce demand and hence defer investment, and budgeting decisions could result in indefinite deferral of some investment proposals. Nevertheless, investments dealing with electricity, water, and telecommunications access targets are largely unavoidable if the government's stated objectives are to be met and should generally

yield high returns. Failure to keep pace with the growth of demand for electricity would likely have high economic costs. And the transport investment proposals have already been prioritized to match existing sources of finance.

So, for purposes of thinking about finance mobilization, a figure of about 10-11% of GDP seems reasonable. Nevertheless, a more definitive appraisal of the appropriate level of investment would require a concerted effort to monitor investment and maintenance activities and evaluate their financial and economic returns.

Figure 1 illustrates the financing challenge implied by this increase in investment. The sources of finance in 2002 are summarized in four categories, with the category "Government" incorporating budget funding, government bond issues, as well as financing by State-Owned Commercial Banks. The category "Users" incorporates the retained earnings of infrastructure enterprises as well as community financing of facilities such as small-scale rural water systems. The illustration supposes that the financing contribution by Government and Users will grow with the economy, at 7% p.a., but that ODA will only grow at 2% p.a. Under these assumptions, ODA, Government and User financing combined would fall short of the total planned/needed investment in 2010 by US\$ 3 billion, or 5.1% of GDP. In order to meet the Government's infrastructure goals, this financing gap will need to be filled with expanded Government financing, higher user tariffs, or an expanded role for the private sector.

An important source of this financing challenge lies in the likely relative decline of ODA as a proportion of GDP. The assumption that ODA will grow at 2% of GDP, is purely illustrative, and is by no means clear. Nevertheless, as discussed in Chapter 1, some time during 2010-2013, Vietnam is likely to begin a "graduation" process in which it moves from

concessional IDA financing, to more expensive IBRD financing. Internationally, the experience has been that when countries graduate, they tend to rely much less on ODA financing, and to rely more on private financial markets.

While the levels of ODA in the future cannot be predicted precisely, the overall nature of the financing challenge is clear. Vietnam must use the coming years to develop financial institutions capable of providing long-term finance for infrastructure, and must reform its infrastructure businesses to become credit-worthy enterprises capable of borrowing long-term.

Need to Increase Cost Recovery

A prerequisite for alternative financing mechanisms is cost-covering tariffs. Ensuring full cost recovery through tariffs opens up a range of financing options that are otherwise generally impossible. The proportion of costs recovered differs from sector to sector, and only in some sectors can it be increased.

- The principle is well established in telecommunications and electricity.
- Charges associated with road transport, such as vehicle registration and petrol tax, more than cover road maintenance costs, but do not cover the full cost of capital invested. There is scope to increase these charges, and there are many possibilities for revenue to be raised from toll-roads.
- In the water sector, cost-covering tariffs have been embraced in the water sector in Ministry of Finance guidelines for water tariffs, and the principle is being considered for implementation in a draft Government decree. But current water tariffs typically only cover operational costs, while capital costs can occupy 80% of total costs of a water utility. Considerable tariff increases would be required in the sector to achieve full cost recovery.
- In areas such as sanitation, waste water

treatment, and solid waste management, the ability to raise revenues is constrained by consumers' willingness to pay. The social benefits of these services typically exceed private willingness to pay, so a level of budget support is appropriate. In these sectors the key to mobilizing alternative financing is to provide clear and predictable rules for the allocation of budget support, so that the future public revenue stream provides sufficient security to mobilize investment. It is possible to combine user payments with budget revenues to meet the costs of service by means such as competitive bidding for service delivery on a least-subsidy basis.

Other Sources of Finance

Wide-ranging reforms are required to develop stronger institutions for infrastructure finance.

Governance reforms are needed for the **state-owned commercial banks** to eliminate informal pressures for "policy-lending", otherwise known as lending to projects that are not commercially justified. In any case, direct lending by banks is likely to play a relatively small role in infrastructure financing, because of the mismatch between short-term deposits held by the banks and the long-term needs of infrastructure.

Bonds are a useful form of financing for infrastructure, since they can provide long-term financing. The Government is making good progress in this area, but more needs to be done in the way of information disclosure concerning the ability of public authorities to repay debt; and to increase the secondary activity and liquidity of the government bond market through enhancements to the legal framework, improved debt issuance and management by the Treasury, and strengthened intermediary functions. As a means of limiting fiscal risks it would be desirable for the Government to shift

from general obligation bonds (backed by taxation powers) to revenue bonds (backed by infrastructure revenues) where possible.

Decentralization has shifted greater investment responsibilities to **provincial governments**. The extent to which these governments have the financial resources to meet their new responsibilities is unclear. The system of transfers from the central government should not undermine the incentives of local governments to raise their own revenues. Limits on their borrowing should be assessed based on their ability to repay debt, rather than the current limits based on investment budgets. An expansion of property taxes could serve as a useful tax base to efficiently consolidate a variety of existing charges, and to provide a reliable source of local government revenue.

Both central and provincial governments have established **specialist investment institutions**, with an emphasis on infrastructure investment: the DAF and the 13 local development investment funds (LDIFs). Rationales for these institutions include pooling finance from a variety of sources (reducing the risks taken by the individual financing sources), and providing centers of technical capacity for developing infrastructure financing schemes. But:

- They also expose the governments to fiscal risks in the event of financing defaults. Measures are needed to distance these institutions from the governments through clearer governance arrangements, and to install professional management practices to reduce risks of default. Improved reporting is required to ensure that the institutions' liabilities are taken into account in assessments of the government's fiscal position.
- In the case of the DAF, on-lending occurs at subsidized rates. If investment subsidies are to be offered, differing levels of subsidies should be offered to different sectors in accordance with the extent of externality or

other public finance rationale, and according to objective criteria.

Equitization is a potential means of raising a limited amount of infrastructure financing. Equity inputs can be used to increase investment, or to retire public capital for use elsewhere. But the highest financing benefits will not be realized if investors discount the price they pay for the risks arising from inadequate disclosure of accounting information, or if investors are unable to obtain management control rights.

There is great potential for more **private investment** in infrastructure. But taking advantage of this potential requires careful transaction preparation and sound regulatory environments. Vietnam should experiment more with private financing than it has in the past, developing a number of transactions across sectors, using competitive bidding, and carefully monitoring the lessons learned.

Allied to the use of private financing, Vietnam should develop a **risk management framework** that permits the appropriate use of contingent liabilities (such as guarantees) in attracting finance, but monitors and limits the government's exposure.

Finally, **efficiency improvements** in procurement and operation of infrastructure services can be thought of as an alternative to the mobilization of finance. Improvements in efficiency can increase output from existing and proposed facilities, and thereby lessen the need for new investments.

2. Planning and Coordination

There is room for improvement in many aspects of Vietnam's planning processes. As a result of success in increasing levels of access to infrastructure services, it is becoming increasingly difficult to select investment projects with high economic returns, requiring increased emphasis on economic considerations

in project selection. Rapid urbanization requires improvements in both the speed of urban planning processes, and also its responsiveness to local conditions. In addition to these reforms addressing emerging challenges, there are long-standing needs to improve coordination between spatial and sectoral master plans, to develop tools to achieve national objectives in provincial and municipal projects, and to integrate environmental considerations into broader investment planning.

Integrating Economic Criteria into Project Selection

The importance of economic criteria for choosing between investment projects will increase as the infrastructure stock increases. Identifying high return projects was easy when much of the population lacked access to infrastructure services. As the access rollout advances, choosing between investments will become more difficult. For example, it is not easy to compare the social returns between providing new connections in high cost locations or providing improved service quality in areas already connected.

Better processes need to be developed for assessing investment priorities across sectors and across projects. Ideally this would entail estimation and monitoring of rates of return, permitting an ordering of projects that could be achieved within financing constraints. A serious effort to build capacity in assessing economic and financial rates of return will take time. In the short term, **a high priority should be to improve the quality of feasibility studies**, providing decision-makers with better information about the relative merits of proposed projects.

Progress is being made in relating investment plans to development goals - the principles of the Comprehensive Poverty

Reduction and Growth Strategy (CPRGS) have been integrated into the Socio-Economic Development Plan for 2006-2010. But the link between Vietnam's socio-economic development goals and investment planning could be improved with the use of a results framework which specifies goals to be achieved (e.g. improve access to hygienic sanitation), strategies for achieving these goals (e.g. investment in sewerage systems in urban areas) and key performance indicators measuring progress towards the goals (e.g. number of urban households with sewerage connection). The goals should be comprehensive, and projects would only be approved if they mapped into the strategies. **An increased emphasis on monitoring project outcomes is also required**, to inform future feasibility studies about the likely impact of different types of investments, and to ensure that progress towards development goals is really being made.

With improved criteria for distinguishing between projects, a framework within which to consider projects' potential contribution to development goals, there will then be a need for a governmental process that is capable of allocating funds to the highest priority projects, with lower priorities receiving funding only to the extent of available funding. Projects that could be financed privately should be given low priority for receiving public funding.

Budgeting processes need to be better integrated with investment planning. There has been a problem with budget discipline in the past, with transport projects being commenced without budget financing authorization. Questions are also raised about whether an appropriate balance is being struck between new investment and maintenance, particularly in the transport sector. The Transport Ministry's recent experience with preparation of budget proposals within a medium-term expenditure

framework (MTEF) has been a useful development in terms of fitting proposed investments within the available financing envelope and giving greater consideration to maintenance costs. The MTEF experience should be developed to extend to non-budget finance sources, and to provide better information about the trade-off between new investment and maintenance (ie the relative rates of return earned by spending in these areas).

Planning for Urbanization

Vietnam's urban population is growing by about one million people per year, with much of that growth concentrated in Ho Chi Minh City and Hanoi. It is likely that growth of Vietnam's rural population will level off in the next five to ten years, with all new population growth being expressed as larger urban populations. Based on China's example, urban growth will present a range of new problems including traffic congestion, pollution, and the need to roll out infrastructure services quickly. It is much more expensive to provide infrastructure services after

Urban planning is poorly managed at present. Centrally prepared spatial plans set unrealistic standards, and partly for this reason are frequently ignored in practice. There needs to be more flexibility in centrally developed spatial plans, and more enforcement of those plans at the local level. Ideally spatial planning should be devolved to a more local level, to enable greater responsiveness to local communities' desires and market developments. Arrangements under which land is provided to property developers in return for infrastructure provision should be carried out through more transparent procedures involving competition to mitigate potential risks for corruption, land speculation, or wasted investments. Revised tax and fee instruments, such as property taxes, should be studied for

their potential to provide infrastructure more efficiently and in closer synchronization with community needs.

The need for more refined appraisals of rates of return to different investments extends to an assessment of the spatial balance of investments. Vietnam has done well over the past decade, balancing high-return investments in major centers of economic activity with rural investments aimed at reducing poverty, and achieving high aggregate growth with only a slight increase in inter-provincial inequality. But migration to major urban centers has been important in restraining inter-provincial inequality. Continued migration may overwhelm planning capacities in the major centers resulting in congestion, inadequate provision of basic services, and environmental degradation. One response would be to provide much more resources to urban planning in the major cities. An alternative would be to divert migration to mid-sized cities, but this would require wide-ranging policies extending beyond mere spatial and sectoral master plans. Assessing whether such policies might be worthwhile would require much better information about the relative social rates of return across different urban areas.

Other Planning Challenges

There are general problems of coordination across government ministries. The need for better coordination between the Ministry of Planning and Investment and the Ministry of Finance is a key area for better coordination, but there is also a need to better coordinate spatial plans and sectoral master plans, particularly in urban areas.

Greater effort needs to be made to integrate environmental issues and assessments of social impacts (particularly resettlement issues) into the

overall planning environments. While environmental impact assessment may occur for individual projects, plans for a series of investment projects similarly need to be subject to assessment. While individual projects may have only marginal impacts, and thus be approved, the aggregate effect of a series of projects may be much larger, and require modification of investment plans. Recent legislation requiring strategic environmental assessments - assessments of the most critical environmental issues in particular areas - is a positive step,

The process of decentralization is ongoing, with a gradual reallocation of spending and investment planning responsibilities from the national government to provincial and local governments. Decentralization brings various risks of failure to coordinate between lower level governments (eg failure to take account of environmental effects on neighbors, or failure to coordinate investments). There is a need for the central government to develop fiscal tools (such as matching grants) that would help to coordinate sub-national decisions with national objectives.

3. Efficiency

In general, Vietnam's infrastructure services are provided relatively efficiently. But as in all countries, there is room to reduce the costs of service. Internationally, experience has been that the key to lowering costs is to increase the commercial focus of infrastructure business entities - through reform of state-owned enterprises or direct private investment - and the introduction of competition. The sorts of reforms necessary to improve commercial focus are also the sorts of reforms needed to increase infrastructure enterprises' access to financial markets.

State-Owned Enterprise Reform

Central to improving efficiency is a governance structure that improves the focus

on the commercial objectives of increasing revenues and reducing costs. Internationally, a typical first step towards improving commercial incentives is "corporatization" of business enterprises - subjecting them to private corporations law. In Vietnam, subjecting infrastructure enterprises to the proposed Unified Enterprise Law may help to install the basics of corporate governance and should be a minimum step. Additional possible measures include specific statements of corporate objectives, and additional reporting beyond that required by the Enterprise Law. Governments typically have additional non-commercial goals for their infrastructure enterprises, and these can be achieved by explicit contracting between the Government and the enterprises, with payment for particular services provided.

Equitization, the sale of shares primarily to workers and managers, has been used as a tool for efficiency improvement in many state-owned enterprises in Vietnam. However, the worker motivation incentives that have been effective in smaller enterprises may be weaker in large infrastructure enterprises, where there are greater possibilities to profit from the efforts of others (free-riding). Accordingly, it is important that equitization of infrastructure enterprises should involve sales of controlling interests to general investors, and that it be supplemented by mechanisms to provide stronger management incentives, such as stock exchange listing.

The agenda for state-owned enterprise reform varies across sectors. For example, the Ministry of Transport has over 200 SOEs, of which over 100 are engaged in construction. Many of these enterprises are excessively indebted. Competition between these enterprises results in low "survival" bids to secure contracts, a practice which ultimately results in low quality works and delayed implementation. In a fully

developed market economy, this situation might be resolved by bankruptcies of the least efficient enterprises. But state-ownership tends to delay such politically difficult decisions. MoT has plans for equitization of SOEs, but these need to be accompanied by clear guidelines on debt accounting, and criteria under which certain enterprises might be declared bankrupt.

In the electricity sector, in contrast, the reform of state-owned enterprises is focused on the transition to a future competitive market for electricity. EVN will need to be broken up into truly separate corporations. Decisions on the size, structure and operational scope of newly formed shareholding companies need to ensure adequate competition in different market segments, but also adequate resources to ensure financial viability. Distribution companies, in particular, need to have sufficient financial strength and managerial capacity to be perceived as credible and make long-term contracts with generating companies.

In the water and sanitation sector, the agenda for SOE reform needs to focus on preparing the utilities to access financial markets. For example, financiers are likely to have more confidence in the credit-worthiness of water utilities if their accounts are prepared according to international accounting standards and are independently audited.

Competition

Competition is the economic force most likely to deliver sustained efficiency improvements. But the possibility to introduce competition is limited in most infrastructure industries. Telecommunications and electricity generation are exceptions.

In telecommunications international experience strongly suggests that the speed of network rollout is accelerated by greater

competition. Several new entrants have been authorized to compete with VNPT in fixed line and mobile services, but VNPT remains dominant. Effective regulation, in particular spectrum management and resolution of interconnection disputes, will be important in facilitating the progress of the new entrants. Faster progress could be made by allowing the entry of foreign firms. In this respect, the United States has obtained an early advantage, obtaining preferential access for its firms under a Bilateral Trade Agreement. But even these advantages limit foreign ownership to 49% and 45% in the mobile and fixed line services markets. These limits may unnecessarily inhibit market entry.

The 2004 Electricity Law and 2006 Road Map for Power Sector Reform set out plans for a phased transition over 20 years to direct competition in electricity generation, with eventual choice of generators for consumers. There are various obstacles to the implementation of these plans, including the difficulty of encouraging private investment in IPPs (a major sectoral priority) when the future market structure is uncertain. Managing the transition to a competitive electricity sector will be one of the most difficult policy challenges in infrastructure.

Private participation

In most other infrastructure sectors, competition can only be introduced in the form of "competition for the market": competitive bidding among private investors for a the right to provide an infrastructure service over a fixed period of time. Done well, with well-prepared competitive bidding and appropriate regulatory environments, concessions, leases, and management contracts can be strong tools for performance improvement as well as investment financing.

Vietnam already has experience in the use of BOTs, but at least some of the existing

BOTs have been negotiated with a preferred operator. Competitive bidding would provide a higher probability of minimizing procurement costs. A number of BOTs have been negotiated with state-owned construction companies. While local financing has advantages in terms of foreign exchange risks, the use of foreign enterprises with specialist infrastructure experience could provide more ideas for management improvement and utilization of new technology. And a difficulty with state-owned enterprises is that weak governance structures may provide weak commercial incentives. There is scope for greater openness toward foreign private enterprises in infrastructure investment. Vietnam is currently revising its BOT decree. A revised decree should entrench a requirement for careful preparation and competitive bidding of BOT contracts.

Beyond the construction of new facilities, various forms of public-private partnerships can help to improve efficiency of existing facilities. Vietnam should conduct pilot projects across different sectors to gain experience in the use of public-private partnerships other than BOTs. An effective process would entail a pipeline of projects, and a dedicated unit associated with the development of public-private partnerships.

Regulation

One form of light-handed regulatory pressure for efficiency improvements is benchmarking. Vietnam has made significant progress in benchmarking water utilities, encouraging better performance by highlighting well performing companies that serve as examples for others. This experience could be copied in some other infrastructure sectors, for example urban environment companies, port operators,

or electricity distribution operations. Greater attention to international benchmarking could also be used as a spur to improved performance.

More generally, performance standards and regulated prices, in addition to their implications for investment and financing, can be used as tools to improve infrastructure service performance. This is more likely to be effective in infrastructure enterprises with stronger commercial focus, such as private firms. Getting prices right is a complex task, requiring specialist skills.

Regulatory institutional and capacity building is required, especially in the areas of cost auditing and economics (to set prices at efficient levels). A high priority is support for the newly established Electricity Regulatory Authority, since lessons learned here will have implications for other sectors. In the telecommunications sector, the Ministry of Post and Telematics' ownership of VNPT creates a conflict of interest in its regulation of the sector, for example in the resolution of disputes over access to VNPT's network by new operators. An agency independent of the Ministry would be desirable.

Addressing Corruption

Corruption raises the final costs of infrastructure services, and is a source of inefficiency. Opportunities for corruption arise at most stages of the infrastructure project cycle. In recent years Vietnam has been making greater efforts to address corruption. Recent reforms have focused on detection and punishment, but have been of general application. Closer review could identify particular infrastructure activities at risk, and develop appropriate responses. Reforms to increase competitive pressures in infrastructure are likely to complement measures against corruption, but should be buttressed by anti-

collusion measures.

4. Poverty

Road and water investments are good means of targeting particular provinces in which rural poverty levels are high, suggesting a need to maintain high priority for these investments.

Urban poverty is likely to increase in coming years. Because of the pace of migration and urban development, addressing emerging urban poverty issues will require improvements in the local planning process to ensure that infrastructure networks are installed "just in time", and in the right places.

There are many different ways of subsidizing use of infrastructure services by the poor:

- Currently, Vietnam uses increasing block tariffs in water and electricity. While the details need to be studied carefully, such schemes typically provide greater subsidies to the relatively well-off, rather than the poor.
- It would be useful to refocus subsidies on connection, rather than consumption, since those with connections are typically less poor than those without connections.
- Output-based methods for subsidy delivery should also be explored. A classic output-based scheme involves competitive bidding among private operators for the right to provide a service (encouraging cost reductions in service provision), and payment of the subsidy only when the requisite outputs have been achieved (transferring the implementation risk to the private sector).

A general subsidy strategy should be developed for infrastructure services, identifying whether subsidies are to be delivered to the poor, and if so, how best to maximize the benefits of those subsidies.

SECTORAL STRATEGIES

1. Transport

Financing

Transport expenditures reached 4.5% of GDP in 2002, although 35% of this expenditure was not allocated budget funding and this in turn led to problems of indebtedness in the sector. In coming years, transport expenditure is expected to be reduced to the order of 3.5-4.0% of GDP, although in a rapidly growing economy this implies continued increases in the absolute level of transport expenditures.

ODA currently finances 37% of central transport expenditures. As in other sectors, the expectation that ODA financing will not grow at the same pace as GDP means that growing sector expenditure will need to be paid for by either consumers or the Government. The scope for direct user payments differs across sectors, but toll-roads are an obvious possibility for greater direct payments. Fuel taxes (reduced subsidies) would be a means of generating additional government revenue in a way that is related to use of infrastructure facilities. Another avenue would be to use land taxes to capture a proportion of the increase in land value associated with infrastructure improvements.

To ensure affordability of transport projects, the financing burden can be shifted to future generations through government borrowing or by direct private investment. Around 30% of the Ministry of Transport's projects between 2001 and 2005 were financed by government bonds, and local development investment funds (LDIFs) are also using bond financing to provide transport projects in some provinces. The private sector could play an expanded role in financing highways, ports and airports.

Planning and Coordination

All of the problems of planning and

coordination affecting infrastructure in general can be found in the transport sector. There tends to be a gap between broad government strategies and detailed sectoral plans, and little coordination between spatial and economic development plans. Poor budget discipline has been the source of unfunded expenditures, giving rise to severe debt problems in the transport construction industry. There is misallocation between new investment and maintenance; among modes, with inland waterways receiving a significantly smaller share of funding than is commensurate with their important role; and in the selection of investments within each sub-sector.

The introduction of a results-oriented planning process at both the national and provincial levels would help align expenditure planning with the desired development goals. The ongoing Medium Term Expenditure Framework (MTEF) pilots could help remedy many of the problems in the planning process by strengthening integrated planning and developing investment plans within the envelope of available resources. Building on the progress already made with the MTEF pilots is an important priority for the sector. Planning across transport sectors needs to be better integrated, to ensure the development of multi-modal transport systems.

Rigidities in the planning system and the lack of metropolitan or regional institutions that can coordinate development across jurisdictional boundaries are obstacles to the development of effective urban transport systems. Planning processes should encourage growth of high density corridors, and establish public transport systems to complement investments in road infrastructure.

Efficiency

Reform of the Ministry of Transport's State-Owned Enterprises is central to improved

outcomes in the sector. Frequently the Ministry's SOEs are over-indebted and deliver low quality and delayed work. An equitization program should be designed to close non-viable enterprises, to establish clear lines of accountability and improved commercial incentives for the remaining enterprises, and to provide clear separation between Ministry finances and enterprise finances. A further possibility would be to remove ownership of shares in the SOEs to a separate ministry, such as the Ministry of Finance, to ensure no conflict of interest between the Ministry of Transport's policy role and the profit motives of share ownership.

Another important source of inefficiency is inadequate attention to road maintenance. Currently maintenance expenditures are at about 50% of the necessary levels. If expenditures on national road maintenance remain at their current levels over the next ten years, the condition of the network would substantially deteriorate, with about 34% of national roads being in poor condition, including 55% of the high traffic volume network.

Currently decisions about whether to pave provincial and rural roads are distorted by bias in the Government budgetary system against maintenance. Knowing that regular budget allocations are unlikely for ongoing maintenance, many local governments prefer to construct paved roads which require less ongoing maintenance than gravel roads but which, depending on local circumstances, may involve higher total costs over the life of the road. The budgetary system should be revised to ensure that decisions on road types can be based on total life cycle cost - ie if on this basis a gravel road is cheaper, then the necessary maintenance budget should be provided.

There are many negative impacts of transport, such as congestion, pollution, and high accident rates, which need to be better

managed to improve the transport sector's contribution to aggregate welfare. Efforts to control congestion by limiting vehicle ownership or registration in Hanoi and Ho Chi Minh City are not working. Alternative instruments, such as higher parking fees, and the promotion of public transport systems may prove more effective. Linked to congestion, both Hanoi and Ho Chi Minh City have air quality problems which could be at least partially addressed with improved vehicle inspections for emissions. A few relatively simple measures, such as improved road design and signage and police enforcement of rules of the road, particularly the requirement for motorcyclists to wear a helmet, could significantly improve road safety

Building Capacity

A long term capacity development framework should address needs at three main levels: the policies and laws governing the sector (building on the findings of a recently completed regulatory review); organizational development (including stronger separation of responsibilities for policy development, enforcement of rules, implementation of projects, and operation of services), and human resource development (training).

Implementation of project works has often suffered from inefficiency and low quality. Recent events have also highlighted problems of governance in relation to project management units (PMUs). The respective roles of PMUs, contractors, and supervision consultants need to be reviewed.

2. Electricity

Financing

The capacity of Vietnam's electricity system needs to double in just five years, to meet

demand growth projected at 16% per year during 2006-2010. While demand-side management must be pushed as hard as possible, the main solution lies in a large-scale medium-term capacity expansion program. In 2004 it was estimated that generation capacity would need to expand from 11,000 MW at the time, to 24,000 MW by 2010. More recent forecasts suggest this was an under-estimate. Annual power sector investment requirements during 2005-2010 are expected to cost over US\$3 billion.

The three main financing options for the sector are self-financing by EVN using retained earnings, different types of borrowing, and independent power investment. EVN exhibited strong financial performance during 2002-2004, permitting a substantial self-financing contribution to the investment program. EVN is also making extensive use of borrowing, from donors and by issuing bonds.

But increases in average retail tariffs are required to ensure an expanded contribution from self-financing and borrowing. Recent cost increases, stemming in part from power shortages in 2005, of themselves would require tariff increases. The massive borrowing needs will also require counterpart funds from EVN to be generated in the next few years, through tariff increases.

EVN's purchase of power from sources currently independent of EVN, including both IPPs and imports, is expected to account for more than -half of new power production during 1995-2010. New IPPs wholly owned by foreign or private firms are expected to provide several thousand megawatts of new build-own-transfer (BOT) IPP capacity. Use of competitive bidding is strongly recommended as the standard method for awarding new IPP power purchase agreements. International experience has been that prices and terms awarded through competitive bidding have provided lower costs than negotiated deals.

Planning

Vietnam has established a good foundation for the coming massive capacity expansion program with the development of the Sixth Power Master Development Plan, covering 2006-2015, with a view to 2025. The basic institutional arrangements, analytical capacity and analytical tools being used are fundamentally sound.

The new Plan emphasizes expansion of all three electricity generation subsectors - hydro, coal, and gas. Imports from China and other neighbors are expected to increase considerably in the future. Demand-side management should play a greater role than in the past - for example shifting consumption from peak times can significantly reduce system capacity requirements.

Ongoing work will be required to ascertain the optimal balance between coal-fired and gas-fired power plants. A central issue is the relative economic costs of coal and gas - in particular, the current price of coal in Vietnam appears to diverge substantially from its economic value - and this should be carefully reviewed before significant investment in either sector. Greater investment in exploration for gas and gas field development will be needed in the longer term, and it is critical for Vietnam to further develop the framework for investment to ensure it remains attractive for international companies

More attention needs to be given to social and environmental issues in the planning process. For example: major hydro developments can involve significant resettlement and social dislocation; the choice between coal- and gas-fired power plants has implications for carbon emissions; and siting of power plants and transmission facilities must be planned with regard to local environmental effects.

Efficiency

The Electricity Law of 2004 and the recently

approved sector Road Map set the direction for major efficiency improvements through the introduction of competition in the power industry. The reform process is expected to span twenty years, proceeding through (a) operation of a competitive market for supply from generators to a Single Buyer (EVN); (b) introduction of a wholesale market, allowing bilateral between large consumers and generators; and finally (c) introduction of competition at the retail level.

To implement these reforms, EVN will need to be broken up into truly separate corporations. The model of EVN as a holding company for assets in generation, transmission, and distribution cannot be retained if true competition is to be achieved. The corporate restructuring and equitization involved will of itself be a significant challenge. Resulting companies need to be strong enough to be active market participants, but should not wield excessive market power. In particular, distribution companies need sufficient scale to be reliable revenue collectors and power purchasing agents.

A further implication of the reforms is that greater flexibility in retail pricing will need to be introduced over time, including mechanisms which allow changes in costs to be passed through to consumers, and for consumers to respond.

The approved reforms could be improved by bringing forward at least some direct contracting between generators and large consumers and/or distribution companies. It is this form of competition which is likely to yield the main efficiency gains.

A major challenge to the reform will be the existing tight reserves in the system. In a market system, supply shortages lead to high prices, as signals to induce more investment. It can take several years for new capacity to come on line and lower prices, during which political support for reform could be undermined by the

high prices. Alternatively, if prices are kept low by regulation, additional investment may not be forthcoming from the private sector.

A linked challenge is the need to expand private investment. With Vietnam's limited experience of international investment in IPPs, there is a need to offer great certainty to potential investors about their future returns. Uncertainty over the nature of future market developments will increase the perceived risk of IPP investments. The key here is to design the power market to mitigate these concerns. For example, emphasis may be given in the market design to cover load primarily with contracts, and limit spot trading to non-contracted surpluses and to clearing differences.

Building Capacity

Existing planning strengths need to be supplemented with greater institutional capacity in demand-side management.

Managing the task of competitive procurement of a large pipeline of IPP projects will pose considerable challenges for the Ministry of Industry, requiring much learning from international experience and building up of capacity in preparing 'bankable' transactions. Experienced international advisers will be a necessary element of this program, but there is a corresponding need for capacity on the Government's side to manage these advisers.

Linked to the reform program, there is a need for an expansion of regulatory capacity. The Electricity Regulatory Authority of Vietnam was established recently. It needs to be an objective institution, charged with implementation of the country's laws, with a mandate recognized by all parties, and operating as an agency separate from the Ministry of Industry's regular business departments. Some areas for ERAV's early attention include: (a) establishment of itself with a distinct identity; (b) definition and publication

of a clear work program; (c) staff training and development; (d) agreement with industry participants on arrangements for information collection and monitoring; (e) definition of ERAV's enforcement powers; and (f) definition of mechanisms for resolution of disputes.

3. Water and Sanitation

Financing

Investment needs to meet the Vietnam Millennium Development Goals in rural and urban water and sanitation by 2020 are estimated at US\$ 600 million annually, which is roughly four times the annual investment in the last ten years. Allowance can be made for a growing economy, but even as a proportion of GDP investment in the sector would need to double, from 0.6% to 1.2%, by 2010. Moreover, nearly 85% of past investment in the sector has come from ODA, which is unlikely to expand significantly in coming years.

Meeting the Government's development targets will require greatly expanded financing from either the government or through borrowing in the capital markets. For borrowing to occur, the utilities would need to generate operating surpluses to meet repayment obligations, which would in turn require increased user fees and increased efficiency of service providers.

One of the keys to the success of the sector is higher but realistic and affordable tariffs. Joint Circular 104 of November 2004 requires that tariffs be set to fully recover costs, which is an important step in the right direction, but enforcement of the Circular remains an issue. The possibility of automatic indexation of tariffs to match cost increases should be considered. For wastewater, the Government should review Circular 67 (2003), which is perceived by local governments as a cap on wastewater fees at 10% of water tariffs. Wastewater operations and investment typically cost more than equivalent

water services, and the need for cost-covering tariffs in the sector is the same.

As the creditworthiness of the sector improves, access to longer term local financing will become important. A staged progression could be envisaged over the next 10 years from current reliance on ODA, through mixed financing, to a sector built on local capital markets. Greater access to ODA funds could be provided to utilities that are able to borrow from financial markets, as a means of encouraging additional finance into the sector. Pilot projects will be required to develop credit-worthy utilities, and to develop capacity on the part of banks or other financial institutions for loan appraisal. The Government or international financial institutions could play a role initially in providing some form of guarantee to early commercial loans to the sector, in order to build confidence, but such guarantees should not be seen as a permanent feature.

Importantly the Government should consider how best to utilize ODA. Gradually ODA should move away from production to distribution, from water supply to sanitation and from investment funding to leveraging local capital. Better targeting of ODA to reduce poverty will be important and Output Based Aid (ODA) should be considered as a mechanism for the use of grant financing for poverty interventions.

Planning and Coordination

Over the long term the government should consider rationalizing into one entity the various line agencies that are currently responsible for policy and oversight of water and sanitation in the urban and rural areas. In the meantime the existing legal framework needs to be upgraded to support the National Rural Water and Sanitation Strategy. In addition the sector policy/regulatory role of

CERWASS should be more clearly separated from its role as service provider.

Efficiency

Overall, Vietnam's water utilities are performing well by developing country standards. But there remains wide variation between utilities in the costs of service and commercial performance, suggesting significant room for improvement for many utilities. Possible measures for improving performance of the utilities include:

- More widespread knowledge about the top performing water companies and benchmark capital and operating costs. The existing benchmarking system could be improved and made available more widely, to be used by provincial governments and potential private investors for cross-sectoral comparison, and by utility managers to highlight areas for improvement.
- Policies to provide incentives to water companies to achieve higher levels of performance. A system of incentives requires a strict evaluation of performance and the use of rewards and sanctions which affect both the utility and its owners. As a first step, performance contracts could be established between individual Provincial Peoples Committees and their service providers, with rewards/sanctions for performance against agreed targets. In the case of poorly performing water service companies, PPCs could choose to competitively bid unserved district towns to new water supply service companies.
- Competition between water service companies could be also simulated, with rewards (eg greater access to Ministry of Construction finance, or donor finance) for companies that meet agreed performance targets, or are the best performing companies in the country, or

that show the greatest improvement in performance.

- The country should continue to encourage the involvement of the private sector as a spur for efficient service delivery, and possibly as a source of investment financing. The national private sector has a distinct role to play in providing services to smaller towns and in the rural setting.
- Improved regulation. At present provincial governments are effectively both tariff setters and owners of water service companies, creating a conflict of interest between the goal of keeping tariffs affordable for consumers, and the goal of profitable operation of the companies. A national oversight agency (nascent regulator) could be established to provide advice/guidance to Peoples' Committees on design of performance contracts, and expected performance of water service companies.
- Focusing on core businesses. Water service companies should divest their construction and other services from the water business. This would provide the basis for the development of a competitive market for construction services and reduce the opportunity for hidden cross subsidies.

Progress on sanitation services is lagging well behind water services. Establishing business entities responsible for the provision of sanitation services is the immediate priority in sanitation reform. Merging wastewater activities into the business of urban water service companies, to take advantage of operating and administrative synergies, should be considered in all but the largest cities, where separate wastewater companies may be appropriate. The Government should continue to support soft interventions which highlight the linkages between sanitation, improved hygiene practices, and health outcomes, and build demand for investments in sanitation.

Building Capacity

The provision of incentives to service providers will only be successful if there is adequate information about the sector, and there is adequate capacity to respond to that information in both service providers and oversight agencies. In particular a sanitation study is required to develop and keep updated comprehensive and reliable data.

The Government needs to be more active in compiling, analyzing and disseminating sector data. Through such activity the Government can build its capacity to improve policy development and the targeting of ODA funds.

The Peoples Committees need to improve their understanding of the opportunities for sector development and how they can benefit. National agencies should take a lead in the provision of training in introducing and maintaining commercial relationships, and effective corporate governance and oversight.

The Vietnam Water Supply Association could play a bigger role in building technical and managerial capacity in service providers. A coordinated action to reduce non-revenue water and improve energy efficiency could yield significant benefits. Training for small-scale providers should be offered to enhance their management and financial capability, and capacity for quality control, contract and contractor management.

4. Telecommunications

Financing

In October 2005 the Ministry of Post and Telematics adopted a target of 32-42 telephone lines (fixed plus mobile) per 100 population by 2010. The investment required to meet this target, given the current level of about 20 per 100 population is about VND 57 trillion (US\$ 3.6 billion) spread over five years. This compares with a total investment

budget for VNPT in 2003 of around US\$ 313 million.

VNPT's main sources of profits - highly priced leased lines and international calling - will be reduced as competition is increased, so self-financing of investments will be reduced. New sources of finance will need to be developed. Possible sources of finance could include bonds or issuance of shares. Current business cooperation contracts (BCCs) with foreign telecommunications companies generate hundreds of millions of dollars of investment, but the restrictions on this sort of investment (such as the absence of management rights for the foreign investor) means that billions of dollars of private investment through BCCs is unlikely. A move to true joint ventures, desirably with the possibility of majority private ownership, management control rights, and equity returns, would be likely to generate higher levels of investment.

Following international experience, there is great potential for increased direct private investment, domestic and foreign, in the sector, but this would require major improvements in the regulation and operation of the sector. The reforms required to encourage private investment are broadly the same as those required to increase access and improve efficiency.

Planning

Market forces, appropriately regulated, could achieve most of the government's telecommunications objectives, without the need for detailed planning of investments and operations by the Government. To arrive at such a position a wide range of policy reforms is required to increase access and improve efficiency.

At present there is no roadmap for policy change. Plans and decrees tend to be engineering documents or penetration goals,

not well-thought-out mechanisms using policy changes that reflect international best practice. There is a need for more policy planning and linking processes and policy changes to anticipated results. Part of this process should be the development of a modern telecommunications law that the WTO, international best practice, and investors would recognize as a model.

One area where market forces could potentially be supplemented with central planning is rural access. On this subject, regard should be had to the WTO Reference Paper, which states that although WTO members may undertake any universal service obligation (USO) regime they like, the USO scheme must be administered in a transparent, non-discriminatory and competitively neutral manner.

Improving Access and Efficiency

The major priority for the sector should be to intensify and entrench competition in the sector. Competition provides positive incentives for increased productivity and responsiveness to customer needs. Internationally, stronger competition has also been linked to faster expansion of access to telecommunications services.

Many elements are needed to promote competition. A clear vision of a future industry structure needs to be devised and disseminated. This structure should have several viable operators, each totally independent of each other, and all subject to impartial regulation. VNPT's multiple ownerships in every market segment, particularly mobile telephony, should be eliminated. VNPT's equipment manufacturing, postal and postal giro businesses should be separated from the telecommunications businesses.

Another key element of achieving competition and private entry is licensing. The

Government should move to a class licensing system that will streamline and clarify licensing procedures. Properly implemented, improved policies could generate substantial revenues for the State budget.

Enforcement of a credible and equitable network interconnection regime is critical to facilitate new entry as well as to provide incentives for existing operators to make investments. A study of current interconnection practices should be undertaken, identifying carrier complaints, abuses if any, and the effects of VNPT's market dominance. Other regulatory tasks that are central to effective competition are rules on numbering and on spectrum allocation.

A minimal step towards the promotion of competition would be compliance with the provisions of the Vietnam-USA Bilateral Trade Agreement. WTO accession could be used as a forum for further development of pro-competitive reforms. A telecommunications offer will be required for accession, which could address issues such as opening of various market segments to foreign participation, possibly increasing private ownership above 50% in at least some market segments, setting realistic deadlines for proposed changes, and meeting the Telecommunications Reference Paper requirements.

Finally, supporting these pro-competitive policy reforms, there will be a need for improved regulatory processes. Consideration should be given to the establishment of a non-ministerial telecommunications regulatory body and the respective responsibilities of this body and the ministry. As a first step a Regulatory Committee could be established within the Ministry; with the goal of having this Committee become the basis of a later Regulatory Authority.

Building Capacity

Whatever institutional arrangements are made,

there is a growing need for enhanced capacity in regulatory issues. While price regulation can be relaxed in competitive market segments, issues of market dominance will remain for some time. In these areas, complicated regulatory issues arise such as collusion on prices, development of inflation-linked price cap formulas for maximum tariffs, dominant carrier abuses of pricing, and analysis of costs underlying prices. A considerable investment in training and contracting-in of international experience is required to address these topics.

5. Urban Development Strategy

Some of the most pressing issues for urban development strategy are investments in water supply, wastewater collection, wastewater treatment and urban transport. To a large extent, these challenges and proposed strategies for dealing with them have been dealt with above, along with the challenges of urban planning and financing of municipal investment.

Other significant forms of infrastructure for urban development include solid waste management and housing. Safe disposal of solid waste is becoming a major issue in Vietnam, particularly in the larger cities. Sound policies have been put in place for solid waste management but enforcement of these policies remains problematic. Only 17 out of 91 disposal facilities in the country are reported to be properly designed sanitary landfills with leachate collection and treatment facilities. The Government has designated 50 waste dumps as environmental hazards that should be closed as soon as possible. A national policy framework, with inspection and enforcement, is needed to ensure that municipal governments deal appropriately with solid waste.

About 25% of the urban population was living in substandard or temporary houses in 2002. The new Land Law of 2004 provided

incentives for property developers to build planned developments. This created a housing boom in major cities, with state-owned companies taking on the role of commercial developers. But the boom is geared largely to middle and upper income earners, and the provision of appropriate housing for low income people remains a major challenge for the Government.

The Government is reluctant to embark on subsidized state housing because it has only recently extracted itself from many of the problems associated with poorly managed state housing provision, such as poor housing management, and insufficient cost recovery for maintenance. Measures which could be explored include the release of land from Government ownership to increase the supply of land in private ownership and hence lower its price; provision of incentives to developers to invest in rental properties; and development of the housing finance market as part of broad financial sector reform. A cost effective way to improve living conditions for the poor is through urban upgrading of tertiary level infrastructure (drains, sewers, water supply, paved roads/alleys, street lighting, etc), providing householders with security of tenure (land use right certificates), and micro-finance to enable residents to improve their houses. Research from other countries show that residents invest up to seven times in their houses what the city invests in infrastructure.

REFORM PRIORITIZATION

It would be difficult for the Government to implement all of the recommendations identified in these volumes simultaneously. Accordingly, there is a need to set priorities. Factors that could be taken into account in setting priorities include the extent to which particular sectors act as constraints to Vietnam's international competitiveness, simple estimates

of the potential benefits of different sorts of reforms, and the administrative capacity of different ministries to handle reform.

In the central ministries of Finance, Planning and Investment, and Construction, a major priority should be the development of improved mechanisms for project selection, monitoring, and evaluation. The central ministries could take the lead in cross-sectoral capacity building to improve the quality of project feasibility studies and monitoring and evaluation activities. The aim should be to obtain high quality economic analyses indicating expected and attained rates of economic return. These estimates should be used as central criteria in selection of projects for public financing and investment approval.

Chapter 3 highlights the need for a better integration of financial planning with other aspects of planning. A mechanism needs to be found by which available taxpayer funds are allocated to infrastructure projects where necessary, by which taxpayer funds are not involved where not intended, and which provides financing alternatives for socially profitable investments where taxpayer funding is not required. These processes should be tied to results frameworks providing strategies that link individual projects to development goals, and which should be prepared by sectoral ministries.

Reforms of capital markets identified in Chapter 2 will require a series of reforms, many within the responsibility of the Ministry of Finance. Among these reforms, preparing the way for private infrastructure investment is a particular priority, given the proposed importance of the private investment in the electricity sector and for its potential role in financing and improving efficiency in other sectors. Here the Ministry of Planning and Investment will have a key role. Reform of the BOT legal framework is one step, but much better project preparation and improved

regulatory institutions will also be required. Efforts to build regulatory expertise could begin with improved emphasis on rules-based regulation within the public sector.

Among line ministries, the sectoral priorities differ in nature.

- In transport, where the emphasis has been on road building, increased attention must be given to reform of state-owned enterprises and to the provision of adequate resources for maintenance.
- In electricity, the private sector will play a large role in meeting new investment needs. Adequately preparing projects for private investment will be the biggest challenge in the coming years.
- In telecommunications, the priority should be to encourage greater levels of competition through greater private sector entry and entry by foreign firms and through improved regulation, particularly regulation of interconnection terms and conditions.
- In water and sanitation, investment targets will be driven by Vietnam's development goals. A contribution to financing will come from increased user tariffs. Particularly in sanitation where user willingness to pay is lower, there will be a need to determine an appropriate public contribution to investment and appropriate mechanism for it to be delivered.