

GLOBAL ECONOMIC GOVERNANCE

National Development Banks and Sustainable Infrastructure in South Asia



Nagesh Kumar is Head of South and South-West Asia Office of UNESCAP based in New Delhi.

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The views expressed in this paper are author's and should not be attributed to the United Nations ESCAP or its member states.

NAGESH KUMAR

In collaboration with PRADEEP K. KESHARI and ROHAN RAY

INTRODUCTION

National development banks (NDBs) have played an important role in South Asia's development over the years. In the early period after Independence, the focus of NDBs was generally of supporting industrial development. Infrastructure development was supported by the budgetary financing by the governments. However, over time with the widening gaps in infrastructure requirements and staggering resources required to close them prompted governments to turn to mobilize private investments. Hence, NDBs began to be established for facilitating infrastructure development including sustainable infrastructure through public private partnerships (PPPs). In addition to the sectoral coverage, the sources of funds and business models have undergone substantial transformation. This paper summarizes this transformation and reviews the financing of infrastructure and sustainable infrastructure. It also presents case studies of two key NDBs engaged in infrastructure financing. It concludes with a few policy lessons from Indian experience. There has been revival of interest in the national development banks all across the world in the context of the potential role that they can play in closing the infrastructure gaps and building sustainable infrastructure by supporting the public-private partnerships. Hence, this stock-taking may have some policy lessons for the new initiatives.

The rest of the paper is structured as follows. Section 2 provides an overview of infrastructure gaps, financing challenges and NDBs in South Asia before summarizing the evolution of NDBs in India over the post-Independence period. Section 3 overviews the infrastructure gaps and financing challenges facing India. Section 4 reviews the issues involved in sustainable infrastructure development. Section 5 summarizes the policy framework for infrastructure NDBs including the sources of finance and their financing models. Section 6 presents case studies of two premier infrastructure NDBs. Section 7 concludes the paper with a few lessons from Indian experience.

1. Infrastructure Gaps, Financing Challenges and NDBs in South Asia

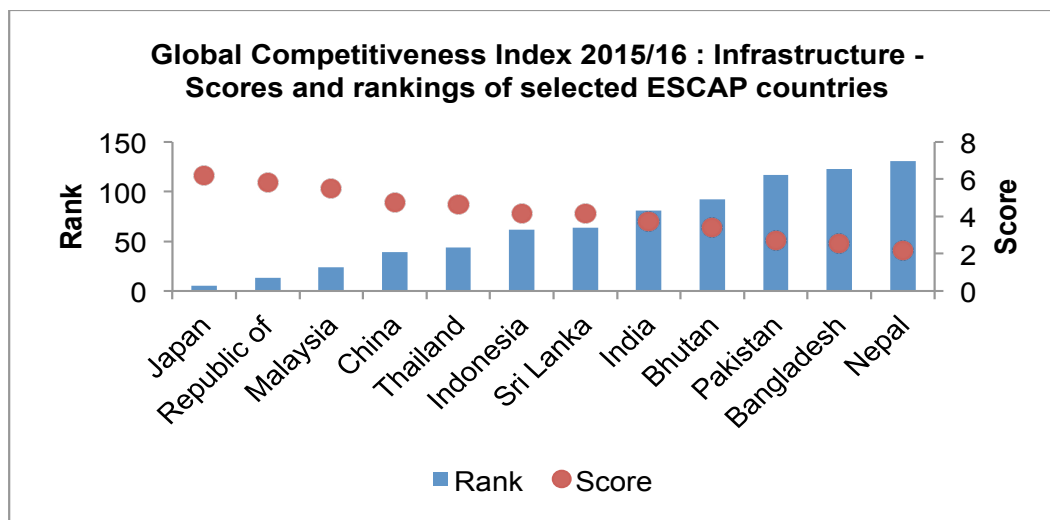
Table 1 shows that South Asian countries continue to suffer from significant infrastructure gaps not only compared to global averages but also with respect to their Asian neighbours. Figure 1 shows the infrastructure scores and rank among countries in terms of infrastructure development. South Asian countries including Sri Lanka, India, Pakistan rank below their Asian neighbours like Indonesia, Thailand, China and Malaysia, not to mention developed countries of the region namely Japan and Republic of Korea.

Table 1: Infrastructure availability in Subregions in Asia and the Pacific and South Asian countries

	Telecom Access (per 100 people), 2013	Electricity Access (% of population), 2011	Access to improved water (% of population) 2012	Access to improved sanitation (% of population), 2012	Internet users (per 100 people), 2013	Rail Density (km of railway per 1000 km ²), 2012	Road Density (km of road per 1000 km ²), 2011	Paved roads (% of roads), 2012
East Asia	114	98	93	69	50	8	400	64
South-East Asia	125	77	89	71	26	4.7	276	55
South Asia	74	73	91	40	14	19.4	1123	52
Bangladesh	75	60	85	57	7	21.8	1838	10
India	73	75	93	36	15	21.7	1578	54
Nepal	80	76	88	37	13	..	139	54
Pakistan	74	69	91	48	11	10.1	341	73
Sri Lanka	108	85	94	92	22	23.3	1819	15
World	109	78	89	64	38	9.1	275	57

Source: UNESCAP based on UNESCAP online statistical database.

Figure 1: Infrastructure Development in South Asia and other countries in Asia and the Pacific, 2015



Source: based on World Economic Forum (2015). *Global Competitiveness Report 2015-16*.

Closing the infrastructure gaps has needed staggering and rising requirement of resources over the years. World Bank has estimated that South Asia needs around US\$ 2.5 trillion investments by 2020. The consultancy companies including BCG and E&Y have estimated that South Asia needs around US\$5 trillion by 2030 in infrastructure investments.

Given that overstretched budgets of the governments in the region have limitations in meeting such staggering requirements of resources, the attention has been focused on harnessing the potential of private investment for closing the financing gaps including through public-private partnerships (PPPs). India has already been quite advanced in mobilizing PPPs having achieved financial closure for 847 projects (76% of total projects) amounting to USD 338 billion since 2002.¹ Pakistan and Bangladesh have also their PPP policies in place and Nepal was finalizing it. Private sector enterprises tend to leverage their equity with borrowings, typically in a 30:70 proportion as in India. To facilitate flow of private investments for infrastructure, therefore, it is important to create institutions that can arrange debt portion.

NDBs in South Asia

Although India has pioneered NDBs from early post-Independence period, NDBs have been established by other South Asian countries over the years. Table 2 lists major institutions established in South Asia and their key features. It would appear that most of the NDBs are government owned, some have started as government companies but were privatized or converted into public companies over time but a few of them are private sector initiatives. The other important observation from the list is that the early NDBs were established to promote industrialization, the more recent ones are typically dedicated to infrastructure development. This transformation of NDBs from industry promotion to infrastructure financing is more clearly observed for India as summarized below.

Finally, South Asian countries have also established the SAARC Development Fund within the SAARC framework headquartered in Thimphu, Bhutan in 2010. SDF has social, economic and infrastructure development windows for lending to projects in member countries that benefit more than one country. While the social window has been operating for the past four years, the other two windows are being operationalized in 2016. SDF will seek to catalyze the infrastructure investments in South Asia working with other multilateral and regional development partners.²

Among the South Asian countries, NDBs in India clearly stand out in terms of number, scales of operation, range of activities, business models. NDBs in India have also evolved over the years with the policy focus as summarized below.

1 Abhay Aggarwal (2015) PPP trends and initiatives in South Asian countries, available at <http://www.unescap.org/sites/default/files/Day%201%20-%20Session%202.1%20-%20South%20Asia%20-%20EY.pdf>

2 www.sdf.org

Table 2: Key NDBs in South Asia

Name of the Institution	Country	Year Established	Ownership	Key Activities	Year	Assets in mn. of national currency
Industrial Promotion and Development Company of Bangladesh Limited	Bangladesh	1981	First private sector financial institution of the country	Reshaping private sector industrialization	2014	7,744
Bangladesh Infrastructure Finance Fund Limited	Bangladesh	2011	Government owned non-banking financial institution	Infrastructure sectors financing	2014	22,548
Infrastructure Development Company Limited	Bangladesh	1997	Government of Bangladesh	Financing infrastructure and renewable energy	2014	48,843
Bhutan Development Bank Limited	Bhutan	1988	Major stakeholder is the Royal Government of Bhutan	Promote agricultural, industrial and commercial development	2010	4,243
Bhutan National Bank Limited	Bhutan	1980	Royal Government and the Royal Insurance Corporation of Bhutan	Lending to businesses	2014	29,079
Export-Import Bank of India	India	1982	Government owned	export financing	2015	984,249
IDBI Bank Ltd.	India	1964	Majority owned by government	Expanding retail footprint while maintaining corporate and infrastructure financing	2015	3,384,583
IFCI Limited	India	1948	Government of India and general public	long-term finance needs of industrial sector	2015	349,680
National Housing Bank	India	1988	Wholly owned by the Reserve Bank of India	Provide housing finance	2015	502,846
Small Industries Development Bank of India	India	1990	Government of India	Principal financial institution for promotion, financing and development of SMEs	2014	678,103
Power Financing Corporation Ltd	India	1986	Government of India	Financing power projects	2015	2,289,116
IDFC Ltd	India	1997	Government, private sector	Financing of Infrastructure projects; becoming universal bank	2015	870,680
Rural Electrification Corporation Ltd	India	1969	Government of India	Financing of power generation and transmission infrastructure for rural areas	2015	1,834,559
India Infrastructure Finance Company Ltd	India	2006	Government of India	Financing of infrastructure projects	2015	390,641

IREDA	India	1987	Government of India	Financing of renewable energy projects	2015	103,797
Infrastructure Leasing & Financial Services Ltd	India	1987	Financial institutions	Infrastructure development and financing	2014	123,819
L&T Infra Finance Ltd	India	2006	Private sector	Financing of infrastructure projects	2015	211,512
SREI Infra Finance Ltd	India	1989	Private sector	Infrastructure financing	2015	347,000
Nepal Industrial Development Corporation	Nepal	1959	state-owned	Primarily engaged in industrial project financing,	2015	3,069
Nepal Investment Bank Limited	Nepal	1986	Public company	Provider of financial services.	2014	86,174
First Credit and Investment Bank Ltd.	Pakistan	1989	Joint venture of National Bank of Pakistan and Water and Power Development Authority.	Investment banking	2015	693
House Building Finance Company Limited	Pakistan	2006	Owned by the Government of Pakistan	housing financial institution	2011	19,287
SME Bank	Pakistan	1984	Majority owned by the Government	Support, develop and promote SMEs	2015	6,218
Zarai Taraqati Bank Limited	Pakistan	2002	government owned (formerly Agri. Development Bank of Pakistan)	financial products for the farming community	2014	163,847
DFCC Bank	Sri Lanka	1955	Government and the World Bank, later registered in 2007 as a public company	corporate and SME finance, business and investment banking	2015	114,612
Lankaputhra Development Bank	Sri Lanka	1988	Fully owned by the Government	development of agricultural and industrial sectors in rural areas	2014	7,914
SAARC Development Fund	regional	2010	Owned by governments of the SAARC Countries	Economic, social and infrastructure windows	2015	USD 400 million

Source: Compiled from various sources and respective websites.

Changing landscape of NDBs in India: Three distinct phases

NDBs in India have evolved over time through three distinct phases, as summarized in Table 3. In the early post-Independence period, the Indian Government established three NDBs viz. the Industrial Finance Corporation of India (IFCI) in 1948, the Industrial Credit & Investment Corporation of India (ICICI) in 1955, and the Industrial Development Bank of India (IDBI) in 1964 to support the industrial enterprises as it was pursuing import substituting industrialization strategy. The State governments also established the state financing corporations to complement the NDBs. The NDBs focused on providing term-loans to the manufacturing enterprises including heavy industries e.g. steel, cement, machinery, automotive, chemicals. To complement their main objective and ensure viability and security of their lending, these NDBs also offered technical services to industrial projects which included loan syndication, project appraisal (including managerial, market, industry, technology and financial appraisal), corporate advisory services, financial guarantees, public issue management, underwriting etc. There was a broad division of labour between the commercial banks which focused on short-term working capital requirements of the corporate sector while NDBs on longer terms loans. For their own resources, NDBs had access to soft window of long term funds from the country's central bank, RBI at concessional rate. They could also raise funds through issue of bonds investment into which by commercial banks qualified for statutory liquidity ratio (SLR) purposes imposed by RBI. They also had access to lines of credit from multilateral and bilateral agencies duly guaranteed by the Government of India.

During the 1970s and 1980s, a number of NDBs were established by the Indian Government to serve specific purposes. These included refinancing institutions (NABARD, SIDBI, NHB) extending refinance for promoting specific activities. For instance, NABARD for promoting agriculture and rural development; SIDBI to promote SMEs; NHB for housing. Other NDBs included REC for supporting rural electrification; HUDCO for housing and urban development; EXIM Bank for providing trade finance; PFC for electricity generation, IREDA for non-renewable energy, among others.³

³ See RBI 2004: *Working Group on DFIs*, Section 1.4.3

Table 3: Changing landscape of NDBs in India, 1947-2015

Early post-Independence period, 1947-1969	Pre-reform years 1970s-1990	Post-reform 1991-
NDBs for supporting industrialization	NDBs for specific sectors	Infrastructure financing institutions for supporting PPPs
IFCI (1948) ICICI (1955) IDBI (1964) + State Industrial Development Banks in different provinces	Rural electrification: REC (1970) Housing and urban dev: HUDCO (1970) Ag. & Rural Development: NABARD (1981) Trade: EXIM Bank (1981) Power: PFC (1986) Shipping: SCICI (1986) Renewable energy: IREDA (1987) Housing: NHB (1988) SMEs: SIDBI (1989)	<ul style="list-style-type: none"> • IDFC (1997) • IIFCL (2006) • IL&FS, L&T Infra Finance, SREI Infra Finance (in the private sector) • IDBI and ICICI turned into commercial banks • IFCI enters infrastructure

Source: author's compilation from various sources

Following the initiation of economic reforms since 1991, the landscape of NDBs has changed dramatically. The first generation of NDBs namely the trinity of IFCI, ICICI, and IDBI lost their privileged access to low cost funds provided by the government by early 1990s, as a part of reforms. This put them at a disadvantage compared to commercial banks which had access to low cost funds from their retail and corporate customers through current accounts. This led them to raise capital through selling equity, by public deposits at higher interest, by issuing bonds, or external commercial borrowings devoid of government guarantees. Reforms and liberalization unleashed in the domestic market also exposed their customers in the industrial sector to external competition. Those that could not compete had to close down leading to rising proportion of non-performing assets. ICICI and IDBI converted themselves into full service banks as a part of their strategy to obtain access to low cost funds. ICICI managed the transition to emerge as the largest private sector commercial bank. It became the first company from India to get listed itself in 1999 at NYSE. IDBI, on the other hand, has been struggling in this transition to become commercial bank since 2004⁴. IFCI is the only one of the trinity of industrial NDBs that has stayed in its original form although it has diversified its portfolio towards infrastructure.

Given the need to mobilize staggering resources for infrastructure development from private sector, new NDBs were established namely IDFC in 1997 and IIFCL in 2006. IDFC and IIFCL have both become important catalysts of infrastructure investments including sustainable infrastructure and have helped to mobilize funds from a wide spectrum of sources. There were other institutions established in the private sector namely IL&FS, L&T Infra Finance and SREI Infra Finance. In addition the sectoral NDBs continue to support infrastructure development actively.

⁴ Also see Nayyar (2015)

2. Infrastructure and Sustainable Infrastructure Financing Challenges in India

Since the onset of economic reforms in 1991, most of the infrastructure sectors have been thrown open for private sector including telecom, ports, roads, power generation and distribution. With the acceleration of economic growth following reforms, infrastructure scarcities started to become serious. Table 4 shows that the investment in infrastructure has doubled in every successive five year plan.⁵ Over the years it became increasingly difficult for the government to fund infrastructure investment through budgetary allocations as in the past. Hence, there has been an increasing reliance on private sector. Private sector investments in India tend to follow the debt to equity ratio of 70:30, as observed earlier. To facilitate flow of private investments for infrastructure, therefore, it is important to create institutions that can arrange debt portion. It is in this context that new age NDBs namely IDFC and IIFCL have been created in 1997 and 2006 respectively. IDFC and IIFCL have mobilized their resources from a variety of sources including sometimes unconventional innovative ones as discussed later. India is expected to require around US\$3.5 trillion in infrastructure investments by 2030 according to the Boston Consulting Group. Financial innovations to mobilize resources are going to be important for meeting the challenge of raising resources of that magnitude.

In that context, establishment of the New Development Bank of BRICS and the Asian Infrastructure Investment Bank (AIIB) is an important development as it will help in expanding the availability of funds for infrastructure development in Asia.

Table 4: Infrastructure Investments under the Five Year Plans, 2002-17

	10 th Five Year Plan 2002-07	11 th Five Year Plan 2007-12	12 th Five Year Plan 2012-17
Infrastructure Investment (US\$ billion)	240	500	1000
% of GDP	5	7	10
Budgetary resources %	78	63	50
Private sector /PPP %	22	37	48

Source: author's compilation from various sources.

⁵ India, Planning Commission *Working Sub-Group on Infrastructure: Infrastructure Funding Requirements and its Sources over the implementation period of the Twelfth Five Year Plan (2012- 2017)*

Financing needs in key infrastructure sectors

Power: CRISIL Research expects investments of Rs. 8.2 trillion in the power sector over the next 5 years (2015-16 to 2019-20). Generation segment investments (Rs 3.9 trillion) will continue to account for 48 per cent of total power sector investments but are expected to slow down due to drop in pace of capacity additions. On the other hand investments in the transmission segment (Rs 2.4 trillion) are expected to witness strong growth over the next 5 years led by robust investments by Power Grid Corporation Limited coupled with steady investments from states including Maharashtra, Gujarat, Rajasthan, Chhattisgarh, Andhra Pradesh and Karnataka. Distribution segment investments (Rs 1.9 trillion) are expected to be driven by increased outlay from the central government on various distribution related schemes.

Around 60 per cent of the total investment is expected to be funded through loans from scheduled commercial banks and central power financing institutions such as Power Finance Corporation (PFC) and Rural Electrification Corporation (REC). On the equity front while Central sector companies such as NTPC, NHPC and PGCIL have healthy cash position few private sector companies such as Jaiprakash Power, GMR Infra and Lanco Infratech will opt for the 5:25 scheme as well as resort to asset sales to lower debt and fund under-construction projects.

Airports: The airport infrastructure sector received investments of Rs. 361 billion (at 2006-07 prices) in the Eleventh Five-Year Plan (2007-08 to 2011-12). Of this over 60 per cent was for development of metro airports under the public-private partnership (PPP) model; greenfield airports at Bengaluru and Hyderabad as well as brownfield airports at Delhi and Mumbai. These four PPP metro airports accounted for about 54 per cent of total passenger traffic in 2014-15. Other investments were directed towards modernization of the airports at Chennai and Kolkata. Moreover an estimated Rs. 45 billion was allocated for modernizing 35 non-metro airports. Till date the Airports Authority of India (AAI) completed development works at 33 airports. Development work at Vadodara and Khajuraho airports is ongoing modernization at Vadodara airport is expected to be completed by first quarter of 2016-17.

The Twelfth Five-Year Plan period (2012-13 to 2016-17) forecasts investments of Rs. 675 billion for developing airport infrastructure. Of these over 75 per cent would be via private participation/PPP with the rest through AAI. However, CRISIL Research expects just half of these investments to materialise over the plan period as most projects are greenfield ventures and hence take time to receive approvals and resolve land acquisition hurdles. Over 2015-16 to 2019-20 CRISIL Research expects investments in airports to the tune of Rs 410-430 billion which is 1.4 times higher than the past five years.

Sea Ports: Majority of the investments in the last five years are estimated to have been pumped in by the private sector. Of the private sector investments bulk of the investments have been driven

towards non-major ports whereas public sector contribution in the investments has remained limited to maintenance of draft and building of allied infrastructure such as roads at major ports. Going forward CRISIL Research estimates about Rs 550-600 billion to be invested in the ports sector over the next 5 years. Odisha, Gujarat, Andhra Pradesh and Maharashtra are the four states which will attract about 80 per cent of the investments. Around 60-65 percent of the investment value is expected to come at non-major ports in contrast to major ports accounting for higher capacity additions (around 52% of total capacity addition). One of the key reasons for this is that the new LNG terminals that account for heavier capital expenses are expected to come at non-major ports like Dahej, Gangavaram, Kakinada etc. As part of assessing investment value we have not included the non-core allied investments towards rail and road connectivity Container Freight Stations (CFS) etc.

Sustainable Infrastructure Development in India

India recognized the relevance of renewable energy for its energy security way before the sustainability debates started especially in the wake of the two oil shocks of the 1970s. The Commission for Additional Sources of Energy (CASE) in the Department of Science & Technology was established in 1981 with the responsibility of formulating policies and programmes for development of new and renewable energy and coordinate R&D. In 1982, a new Department of Non-conventional Energy Sources (DNES) was created in the then Ministry of Energy. The Indian Renewable Energy Development Agency (IREDA) was established in 1987 to support renewable energy and energy efficiency projects under the DNES. In 1992, DNES evolved into the Ministry of Non-conventional Energy Sources which was renamed as the Ministry of New and Renewable Energy in 2006.

Table 5: Renewable Energy Capacity in India, 2015

	Target FY- 2015-16	Cumulative capacity as on 30.09.2015	Target 2022
Wind Power	2400.00	24,376.26	60,000
Solar Power	1400.00	4,344.91	100,000
Small Hydro Power	250.00	4,146.90	5,000
Bio-Power (Biomass & Gasification and Bagasse Cogeneration)	400.00	4,418.55	10,000
Total (including off-grid and waste to energy)	4590.00	38,683.70	175,000

Source: India, MNRE

Table 5 summarizes the status of renewable energy capacity and targets in India as in 2015 covering wind energy, small hydro power, solar energy, bio mass and related sources. As on March 31 2015 installed capacity in renewable energy sector stood at 38.7 GW of which wind energy had the highest share of 63% followed by 11 per cent each in solar, small hydro power and biomass/

cogeneration. However, in future a greater reliance has been put on harnessing the potential of solar energy with its cost going down and has set up a target of having 100GW of solar capacity by 2022 besides 60GW of wind energy. In its Intended Nationally Determined Contribution (INDCs) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) on October 1 2015, India has agreed to reduce its greenhouse gas emissions intensity of its GDP by 33-35% by 2030 compared to 2005 levels. To meet this target, India will need to generate about 40% of its electricity from non-fossil fuel sources as compared to 30% presently. Thus India has to increase its installed capacity of renewable power by 33% to 300-350 GW by 2030 thus further doubling the renewable capacity from 175GW in 2022. Achievement of INDCs target will require USD 2.5 trillion of investments as well as sourcing of an array of technologies from developed countries and collaborative R&D for their diffusion in the country. As a result there is a currently a heavy focus on renewable energy especially solar energy.

Solar Energy: CRISIL Research expects 10-11 GW of solar PV capacity additions over 2016 to 2018 (refers to Apr-Mar). This will be driven by additions under National Solar Mission (NSM) Phase II - batch II, III and V coupled with capacities tendered by distribution companies in various states including Karnataka, Telangana, Andhra Pradesh (AP), Punjab, Madhya Pradesh and Tamil Nadu. Capacities tendered by cash-rich public sector undertakings (PSUs) such as NTPC, Coal India Limited, ONGC and others will further support additions. Moreover government initiatives to facilitate land acquisition improve transmission infrastructure and funding availability will support capacity additions.

Wind Energy: While wind power constituted only 8.6 per cent of the total power generation installed capacity (274 GW) in India as of June 2015 its share in renewable energy capacity (36 GW) was 65 per cent. Central government provides two incentives - accelerated depreciation benefit and generation-based incentive (GBI) - to encourage wind power capacity additions. Accelerated depreciation benefit which was restored in August 2014 allows depreciation of 80 per cent on wind assets in the first year. In GBI the generator receives Rs 0.50 per unit of electricity generated subject to a cap of Rs 10 million per MW. It is estimated that wind power accounted for about 3 per cent of the country's total power generated in 2014-15. CRISIL research expects wind power capacity additions of 10-11 GW over the next three years (2016-18) as compared to 7 GW over the last three years (2013-15). Re-instatement of accelerated depreciation (AD) benefits in union budget 2014-15 led to a recovery with capacity additions of 2300 MW in 2014-15 (a 10 percent y-o-y increase). Capacity additions were led by states such as Karnataka, Rajasthan, Madhya Pradesh, and Andhra Pradesh which together contributed about 40 per cent of capacity additions (in 2014-15) driven by attractive preferential tariff and availability of sufficient evacuation infrastructure.

Some key lenders to wind projects include SBI, Axis Bank, L&T Infrastructure Finance Company Ltd., IREDA, and PFC Green Energy. While few players such as Ostro energy and

Mytrah energy have received foreign funding from Actis LLP and Merrill Lynch respectively the proportion of foreign funding is much higher in solar power projects since it is typically linked to import of solar modules. Till date most of the wind energy projects have been financed with recourse to the parent company's balance sheet and/or promoter's guarantees. Indian banks have financed most wind power projects on recourse basis at interest rates of 12-13 per cent. Bankers have been wary of extending project financing to these projects due to lack of region specific performance data risk related to variability of wind patterns and weak health of discoms. Going forward funding is expected to remain a critical factor to support capacity additions especially given the aggressive target of 60 GW by 2022 set by the government. However few large public sector banks (such as SBI), public sector financial institutions (such as PTC India Financial Services Ltd) and other large private sector banks (such as ICICI and YES Bank) have committed to fund renewable energy projects.

The private equity (PE) investors have evinced significant interest in the recent past in funding of the wind power project. Few companies such as Ostro energy (Funded by Actis LLP), Green Infra (Sembcorp), Renew wind Power (Goldman Sachs Group Inc.) and Mytrah Energy (Funded by Merrill Lynch and Apollo Global Management) are backed by the global private equity funds which typically funds projects at a lower interest cost. Actis LLP is funding \$230 million of projects to be set up under Ostro energy in Feb 2015; Mytrah Energy raised about \$70 million from Merrill Lynch and Apollo Global Management; Goldman Sachs bought \$135 worth of equity in ReNew Wind Power in June 2013.

Bio Mass: As on 30 September 2015 the total installed capacity of biomass-based power has increased to 4.4GW. Almost 413 MW of capacity has been added during the year of which nearly 295 MW was added by Maharashtra and Karnataka. Currently Uttar Pradesh and Maharashtra lead the market with installed capacities of 776 MW and 940 MW respectively. The potential for power generation from biomass is nearly 17500 MW (agro residue and plantations) while an additional 5000 MW potential exists in bagasse-based co-generation.

Small Hydropower (SHP): The installed capacity of SHP plants has increased at a CAGR of 9.4 per cent to 4.1GW by September 2015 from 2180 MW in 2007-08. Karnataka with an installed capacity of 1031 MW has the largest SHP capacity in India. MNRE has set a target of achieving 5000 MW of cumulative installed SHP capacities by the end of the Twelfth Five Year Plan. Of this nearly 33 per cent of the potential SHP capacity lies in the northern region.

5. Sources of Finance for NDBs for Infrastructure Development and business models

As observed earlier, the early NDBs namely the trinity of IFCI, ICICI and IDBI depended largely on the government funds in the form of share capital and their access to low cost funds from commercial banks facilitated by the government policy. Government also helped them raise resources from MDBs and external markets through guarantees. To support the financing of infrastructure investments, the Government through the central bank has created more flexible guidelines allowing the NDBs to raise external commercial borrowings and prudent lending norms by creating a new category of infrastructure finance companies.

Policy framework for Infrastructure Finance Companies

In 2010, the Reserve Bank of India created a new category of Infrastructure Finance Companies (IFCs) among the Non-Banking Financial Companies a term that includes NDBs in India.⁶ To qualify for an IFC a NBFC should have a minimum of 75 per cent of its total assets in the form of infrastructure loans, it should not accept deposits from public, it should have owned funds of atleast Rs. 3 billion, and enjoy a minimum credit rating 'A' and have a CRAR of 15 percent (with a minimum Tier I capital of 10 percent). As per these criteria, besides IDFC and IIFCL, a number of sectoral NDBs were recognized as IFCs including REC, HUDCO, IREDA, PFC, IRFC, IL&FS, SREI. Having been granted a bank license by RBI on July 23, 2015, IDFC has converted itself into a commercial bank, IDFC Bank, with effect from 1 October 2015.

IFCs are allowed to exceed the standard credit norms⁷ and can lend to a single borrower upto 25% of its owned funds as opposed to the earlier norm of 15%, and to a single group of borrowers, upto 40% from 25%. IFCs are also permitted to avail of ECBs, including the outstanding ECBs, up to 75% of their owned funds, for on-lending to the infrastructure sector as defined under the ECB policy.

Besides relying on the ECBs, the new generation NDBs namely IDFC, IIFCL as well as the sectoral IFCs have explored a variety of sources sometimes in an innovative manner as summarized below.

Foreign Exchange Reserves for Infrastructure Development: India has pioneered mobilization of some of its foreign exchange reserves for infrastructure development through IIFC (UK) Ltd, a special purpose vehicle incorporated in London in April 2008 as a subsidiary of IIFCL. IIFC (UK) issues foreign currency denominated bonds for investment by the Reserve Bank of India. The funds, thus raised, are utilized by the company for on-lending to the Indian companies implementing infrastructure projects in India and/or to co-finance the ECBs of such projects for

⁶ RBI Circular No.- RBI/2009-10/316 DNBS.PD. CC No. 168 / 03.02.089 /2009-10 dated February 12, 2010.

⁷ Non-Banking Financial (Deposit Accepting or Holding) Companies Prudential Norms (Reserve Bank) Directions, 2007.

capital expenditure outside India in foreign exchange such as equipment purchase.⁸

Green Bonds and Infrastructure Bonds: NDBs active in renewable energy including PFC, REC, IREDA among others are raising low cost, long term resources for investment in renewable energy generation through issue of tax free bonds, called Green Bonds.⁹ Infrastructure NDBs including IIFCL, IDFC have also been raising resources from the market through issue of Infrastructure Bonds of 10 years duration that enjoy some tax benefits upto a limit of Rs 20,000 per accounting year.

Infrastructure Debt Funds (IDFs): Infrastructure NDBs have been allowed to launch IDFs that serve as investment vehicles in which domestic/offshore institutional investors, specially insurance and pension funds can invest through units and bonds issued by the IDFs. IDFs would essentially act as vehicles for refinancing existing debt of infrastructure companies, thereby creating fresh headroom for banks to lend to fresh infrastructure projects or take over loans extended to PPP infrastructure projects. IIFCL, IDFC among other NDBs have launched their IDFs to mobilize resources through this route.

Intermediating resources from multilateral development banks (MDBs) and bilateral donors: Some NDBs are intermediating the funds provided by MDBs for infrastructure development. IIFCL, for instance, has committed lines of long-term credit from ADB (USD\$ 1.9bn), World Bank (\$ 195 mn), KfW (Euro 50 mn). It has also executed a financial agreement with European Investment Bank for Euro 200 mn. Multilateral funding agencies such as Asian Development Bank (ADB) and International Finance Corporation (IFC) and private equity funds are supporting a number of solar projects. In 2014-15 these agencies sanctioned approximately \$610 million for various renewable energy projects.

National Investment and Infrastructure Fund (NIIF): NIIF is a fund being created by the Government of India, following the announcement in the Union Budget 2015-16, for enhancing infrastructure financing in the country. Proposed to be set up as a Trust, it would raise debt to invest in the equity of infrastructure NDBs. The initial authorized corpus of NIIF would be Rs. 40,000 crore, with Government's contribution of 49% and rest open for contribution from others including sovereign wealth funds, public sector enterprises, domestic pension and provident funds and National Small Savings Fund. NIIF may utilize the proceeds of monetized land and other public assets for infrastructure development. The establishment of NIIF was approved by the Securities and Exchange Board of India (SEBI) on 28 December 2015.¹⁰

National Clean Energy Fund (NCEF): Given the capital intensive nature of solar power, cost of

⁸ RBI Staff Studies #SS(DEAP) 4:2010: 46-7

⁹ REC, PFC, IREDA, others to raise Rs 5000 crores via tax-free bonds, *Live Mint*, June 3, 2015. Subsequently, the Securities and Investment Board of India issued guidelines for Green Bonds in December 2015.

¹⁰ Deepshikha Sikarwar, 'Modi Sarkar's Rs 40Kcr Infra Fund hits Road', *The Economic Times*, 30 December 2015

capital plays an important role in determining viability. In order to provide funds for development of solar energy resources, the NCEF was established in 2010-11 and the total collection so far (till 2014-15) under the Fund is Rs. 171 billion. As on September 2014 about Rs. 36 billion of budgetary allocations have been made from this fund to various renewable energy projects. In 2015-16 the budgetary allocation to renewable energy stood at Rs. 61 billion led by Rs. 20 billion allocation through NCEF. State Bank of India (SBI) has committed Rs. 750 billion in debt funding over the next five years to 15 GW of renewable energy projects.

Ujjawal Discom Assurance Yojana (UDAY): Although not designed to be a source of funds for infrastructure, UDAY is a debt recast scheme for state-run power distribution companies which will receive funds from the government to repay debts owed to PFC and REC. The PFC and REC in turn are planning to mobilize the funds received from the utilities to enhance their focus on renewable sector for supporting renewable energy investments including through refinancing and take-out finance. According to reports, the magnitude of such lending is likely to be around Rs 1000 billion.¹¹

India Infrastructure Project Development Fund (IIPDF): One of the constraints for infrastructure development has been a lack of a pipeline of credible, bankable projects that can be offered to the private sector through competitive bidding process. To address this constraint, the Government of India established the IIPDF in July 2007 with an initial contribution of Rs 1000 million. IIPDF supports up to 75% of costs for developing potential PPP projects through an advisory panel of pre-qualified experts as part of the overall PPP development framework. The IIPDF is open to access by all central government and state government agencies that are willing to abide by specified criteria. The IIPDF may be replenished through recovery of costs from successful bidders.¹² One of the NDBs namely IL&FS has also established an India Project Development Fund (IPDF) towards funding project development expenses of large infrastructure projects, primarily in surface transport, ports, water and power infrastructure. IPDF meets all project development costs and takes on the development risk upto financial closure.¹³ IDFC has also developed a project development arm, supporting projects through feasibility, structuring, and presentation to bidders.

Models of Infrastructure Financing

Besides direct lending to companies undertaking infrastructure projects, NDBs especially IIFCL, have evolved other modalities of promoting infrastructure financing including take-out finance and credit enhancement schemes as follows:

Senior and subordinated debt: As part of a consortium, IIFCL provides long-term funds to

11 Sarita Singh, 'PFC, REC to lend Rs 1 L Cr to renewable energy sector', *The Economic Times*, 12 January 2016

12 http://www.pppinindia.com/pdf/guideline_scheme_IIPDF.pdf

13 www.ilfsindia.com

commercially viable infrastructure projects, taking an exposure of up to 20% of total project cost (including subordinate debt and refinance, if any). Up to 31st December 2014, on a standalone basis, IIFCL has made cumulative gross sanctions of Rs 602 billion under direct lending to 344 projects, and disbursements of Rs 241 billion.

Takeout Finance: A large part of lending to infrastructure is still made by commercial banks. In order to address the asset-liability mismatch and exposure constraints faced by banks, IIFCL is taking over loans from the books of the banks and free up their funds for investing in newer infrastructure projects. IIFCL lends up to 30% of total project cost (including direct lending). Up to 31st December 2014, IIFCL has made net sanctions of Rs 97 billion in 54 projects (after cancellation) and has disbursed Rs 65 billion.

Credit Enhancement Scheme: Under this scheme, IIFCL provides its partial credit guarantee to enhance the credit rating of bonds (for refinancing of existing loans) of infrastructure companies. IIFCL can undertake credit enhancement to the extent which enhances the credit rating of the project bonds issued by the issuer up to maximum of AA subject to a maximum of 50% of the total amount of project bonds issued. This enables channelization of long term funds from investors like insurance and pension funds in such bonds. Asian Development Bank (ADB) is providing backstop guarantee facility to IIFCL for up to 50% of IIFCL's underlying risk pertaining to the credit enhancement scheme.

Refinance Scheme: IIFCL provides refinance to banks and other eligible financial institutions for their loans to infrastructure projects. Up to 31st December 2014, IIFCL had made cumulative disbursements of Rs 62 billion as refinance. IREDA under its IREDA-NCEF refinance scheme re-finances the 30 per cent of total loan disbursed by the scheduled commercial banks/financial institutions to the clean energy project developers at concessional rate of interest.

Specialized subsidiaries for sustainable infrastructure: Some NDBs are creating specialized organizations to focus on sustainable infrastructure. Power Finance Corporation India Limited, for instance, has set up a specialized subsidiary PFC Green Power to focus on renewable energy and had lent Rs. 174 billion to the renewable energy projects comprising 35% of the outstanding loan book at the end of March 2014.¹⁴

To sum up therefore, NDBs are playing an important role in infrastructure and sustainable infrastructure development through catalyzing larger investments. Catalyst role of NDBs through different modalities of financing infrastructure is clear from the fact that IIFCL, for instance, has supported 342 projects upto March 2015 that would mobilize private investment of US\$ 110 billion with an investment of \$ 12 billion of which \$7.6 billion has been disbursed. It has raised about US\$ 6.5 billion from domestic markets through a mix of infrastructure bonds and tax free bonds,

¹⁴ See PFC Annual Report 2013-14

long term loans from insurance companies and small savings funds and has intermediated funds provided by MDBs and foreign exchange reserves through its UK based subsidiary. They are also providing technical expertise and funding for development of bankable projects.

6. Case Studies of Key Infrastructure NDBs

Infrastructure Development Financial Company Ltd. (IDFC)

IDFC was born out of the need for a specialized financial intermediary in 1997. Established by the Government of India along with various Indian banks and financial institutions and IFIs, it has raised capital through an IPO in July 2005, and through an institutional placement in 2007, bringing the Indian government's stake down to 22%. Ever since its establishment, it has played an instrumental role in supporting private sector infrastructure development in India. It also works in collaboration with the government to help them in formulating policy and regulatory framework that support private investment and public-private partnerships in infrastructure development. It registered with the Reserve Bank of India as a Non-Banking Financial Company in 1998 and in 1999 the company was notified as a public financial institution. Another turning point in the evolution of the company was in 2015 when it received Reserve Bank of India's permission to become a universal bank and changed its name to IDFC Bank.¹⁵

Business Model

The businesses of IDFC can be categorized into corporate investment banking (project finance financial markets group and security) alternative asset management (private equity infrastructure real estate) and public asset market management. IDFC offers a range of financial products for financing a project which includes senior debt financing mezzanine capital financing (preference capital and subordinated debt) and equity financing through investments in unlisted companies. The sectors covered by project financing include energy (electricity generation, transmission, distribution and oil and gas pipelines), urban infrastructure (solid waste management), communications (telecommunication and IT), and transportation (roads ports and airports).

Sustainability in IDFC's business model

IDFC shows due respect to sustainability in its lending policies as well as in its overall corporate strategy. As Table 6 shows, sustainable infrastructure defined as per the International Development Finance Club's methodology accounts for about 40% of IDFC's total exposure. It would be higher if energy generation based on cleaner fuels like natural gas, and electricity transmission are treated as sustainable. The company has issued a Sustainable Report 2012-14 highlighting the steps taken

¹⁵ This material is drawn from the annual reports and other information available at the company website.

by it to make its operations more sustainable.¹⁶ It had also established a Foundation to conduct its CSR activities before companies are required to spend on CSR.

Table 6: Sectoral distribution of IDFC's total exposure by sustainability, 2015

Transportation, including toll roads,	20%
Railroad systems, urban and inter-urban transport networks	10%
Energy, including generation, transmission and distribution of electricity,	20%
Renewable energy (Wind, Solar, Hydro)	20%
Ports	10%
Airports	10%
Telecom	10%
Others (Logistics, distribution, Urban infrastructure, SEZ, Healthcare etc.)	10%
Total sustainable infrastructure	40%

Source: obtained from IDFC senior management

Major Projects Financed by IDFC

a) Energy

Electricity Generation through traditional fuels

- Financial advisory and lead arranger for a 1100MW liquefied natural gas based combined cycle power plant in Gujarat
- Lead financial institution for a 1005 MW coal fired power plant in Orissa
- Lead financial institution for two 135 MW multi-fuel fired power plants in Gujarat

Renewable Energy

- Lead financial institution for wind power projects in Andhra Pradesh, Gujarat, Tamil Nadu and Rajasthan aggregating to 202.4 MW
- IDFC has participated in equity funding of a solar panel manufacturer and is in the process of tapping opportunities to finance solar generation projects
- Current exposure to hydro power includes more than 1300 MW capacity

Electricity Transmission

- One of the main lenders for a 1150 Km transmission project connecting northern and eastern India
- Provided pre-bid advisory services to a consortium of China Light and Power and Gammon Infrastructure Limited for a power transmission project

Electricity Distributions

- Financed major private distribution licenses in Delhi, Ahmedabad, Surat, and Mumbai

¹⁶ <http://www.idfc.com/>

- Provided advisory services to the Government of Karnataka in connection with privatization of electricity distribution

Oil and Gas Pipelines

- Joint lead financiers for the east-west pipeline of a leading private Indian corporate
- Lenders to a trunk pipeline network in Gujarat and the lead financiers of a private sector city gas distribution business in Ahmedabad
- Financed gas distribution project within Ahmedabad

b) Transport and Storage

Roads

- Financed a number of “build operate and transfer” highway projects
- Lead lenders in several prominent road projects including national highways in Rajasthan Andhra Pradesh Punjab and Maharashtra

Ports

- Lead arrangers for the first private port of India at Pipavav and also the bunk terminals at Jaigarh
- Advising on evolving an institutional and regulatory framework in consultation with World Bank and stakeholders for the Indian port sector

Airports

- Lead lender for the Hyderabad greenfield airport
- Lender for the modernization of Delhi airport
- Three sub-concessions at the Delhi airport

c) Urban Infrastructure

Solid Waste Management

- Financed project involving conversion of 300 tpd of municipal solid waste into 5 MW of power and 75 tpd tons of compost

d) Telecommunication and IT

- Provide support to the existing established players who require incremental financing for their capital expenditure for 2G expansions and project financing to roll out 3G and broadband wireless access services

e) Industrial Commercial Infrastructure and Others

SEZ

- Successfully completed SEZ projects include Ennore SEZ and Gujarat Positra Port Infrastructure Ltd.

As can be seen from Figure 2 the greater share of exposure has been enjoyed by the energy sector followed by transportation and telecommunication and IT.

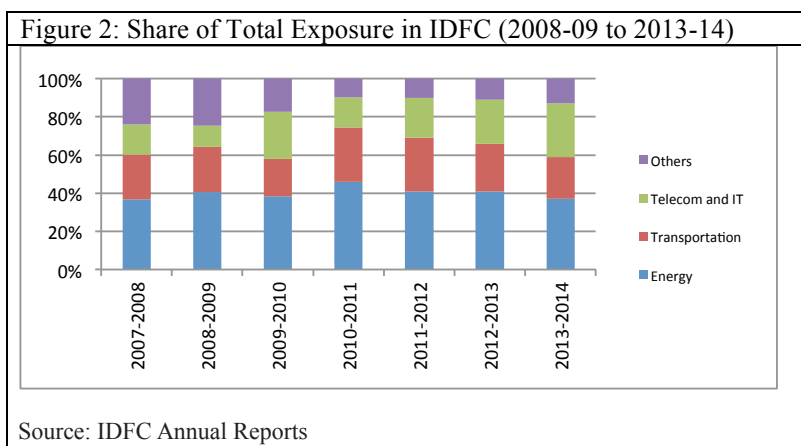


Figure 3: IDFC: Loan Approval and Disbursement in Energy Sector (2004-05 to 2011-12)

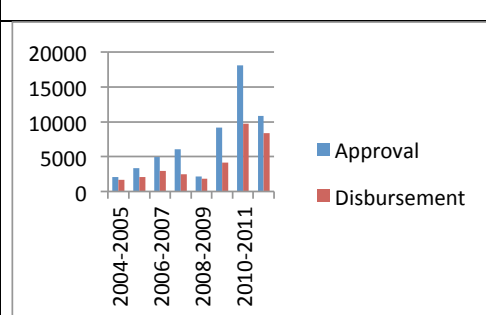


Figure 4: IDFC: Loan Approval and Disbursement in Transportation Sector (2004-05 to 2011-12)

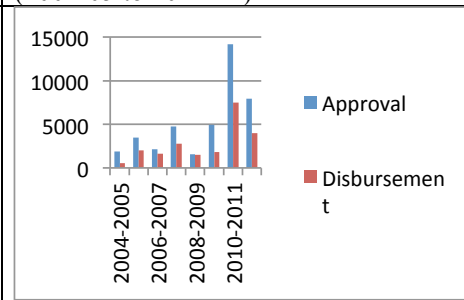
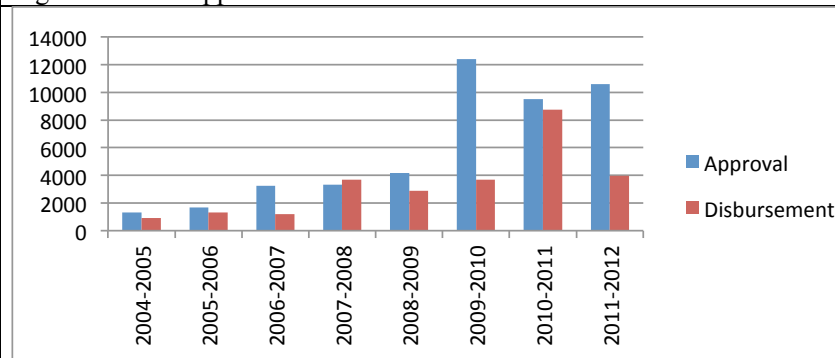


Figure 5: Loan Approval and Disbursement in Telecommunication Sector (2004-05 to 2011-12)



Source: IDFC Annual Reports

Indian Infrastructure Finance Corporation Ltd. (IIFCL)

IIFCL was incorporated in 2006 as a non-banking finance company with 100 per cent ownership of the Indian Government. It was recognized as an Infrastructure Finance Company by the RBI in September 2013. The main objectives of IIFCL is to raise large scale long-tenure funds from the market at economic costs and on-lend to PPP projects while keeping the intermediation costs at the bare minimum. To ensure that IIFCL delivered on its mandate a detailed framework was set out to guide its functioning in mobilisation of resources selection of projects mode of lending and

the approval processes.¹⁷

Business Model

IIFCL provides financial assistance through multiple modes viz. debt financing, subordinate debt and refinancing. Further the exposure of IIFCL in any project is limited to 20 percent of the project costs which translated to about 30 percent of project debt assuming a debt equity ratio of 70:30. The guidelines also provide that upto one-half of IIFCL lending could be in the form of subordinated debt which could serve as quasi-equity. PPP projects in India typically carry a compulsory buy-back arrangement which requires the Government to take over a project in the event of termination primarily because such projects cannot be abandoned due to the public service that they provide. The buy-back arrangement requires the Government to repay the lenders which in turn implied that lending by IIFCL would be secure. In order to keep the intermediation costs low IIFCL was visualised as a lean organisation. Therefore all lending by IIFCL is to be undertaken through a consortium of lenders. Since 70 per cent of the debt was to be provided by commercial banks the task of project appraisal and risk assessment was left to the banks while IIFCL lending was based on the premise that the principal lenders especially the lead bank would undertake the requisite due diligence. This allowed IIFCL to remain a lean institution with a clear focus and low costs. Since many infrastructure projects required substantial imports especially in case of power generation projects IIFCL incorporated a subsidiary at London in 2008 to be known as IIFC (UK) Ltd in order to provide foreign currency loans to Indian infrastructure projects that were privately financed. An important aspect of IIFCL lending was the longer tenure of its loans which helped in extending the average maturity of the project debt and also encouraged the commercial banks to follow suit. Thus IIFCL has become an important instrument in extending the average tenure of debt for infrastructure projects making them more bankable and financially viable.

Sources of Funds

IIFCL raises funds from domestic and overseas markets on the strength of sovereign guarantees. This helps it to keep the borrowing costs low. Moreover such borrowings do not have to meet the net-worth and equity requirements as their repayment is backed by a sovereign guarantee. IIFCL is also enabled to tap into insurance and pension funds besides raising external debt including those from multilateral institutions like the World Bank and the Asian Development Bank. Up to March 2015 IIFCL has raised about US\$6.5 billion from the domestic markets through a mix of instruments comprising taxable bonds tax-free bonds and long-term loans from Life Insurance Corporation and National Small Savings Fund. It has also established a strong relationship with bilateral and multilateral institutions like ADB, World Bank and KfW who have committed lines of long-term credit to the extent of US\$1.9 billion US\$195 million and Euro 50 million respectively.

¹⁷ This material is drawn from the annual reports and other information available at the company website.

IIFCL has also entered into an agreement with the European Investment Bank for a loan of Euro 200 million.

Application of Funds

Upto March 31 2015 IIFCL has approved 342 projects that would mobilise private investment of US\$110 billion of which IIFCL share would be about US\$12 billion. It has so far disbursed US\$7.6 billion to the approved projects. A major chunk of loans has been sanctioned for the road sector (47 percent) followed by the power sector (40 percent). Till March 2015 IIFC (UK) has accorded cumulative sanctions of US\$3.5 billion of which disbursements of about US\$1.4 billion have since been made. IIFCL has so far contributed to the development of more than 19000 km of highways creation of generating capacity of more than 40000 MW of power addition of about 50 million tons of port capacity development of several urban infrastructure projects including metro rail projects and the development of Delhi and Mumbai International Airports which handle bulk of the air traffic in the country besides several other projects. The above initiatives have also spurred a rapid growth in infrastructure lending by banks which increased from a level of about US\$1.4 billion in 2000 to about US\$173 billion in 2013 accounting for about 13 percent of the total lending by banks in India. The term loans extended by banks also constituted more than half of the debt financing for infrastructure sector. It is noteworthy that during this period bank loans for infrastructure projects grew at a compound annual grown rate of about 40 percent.

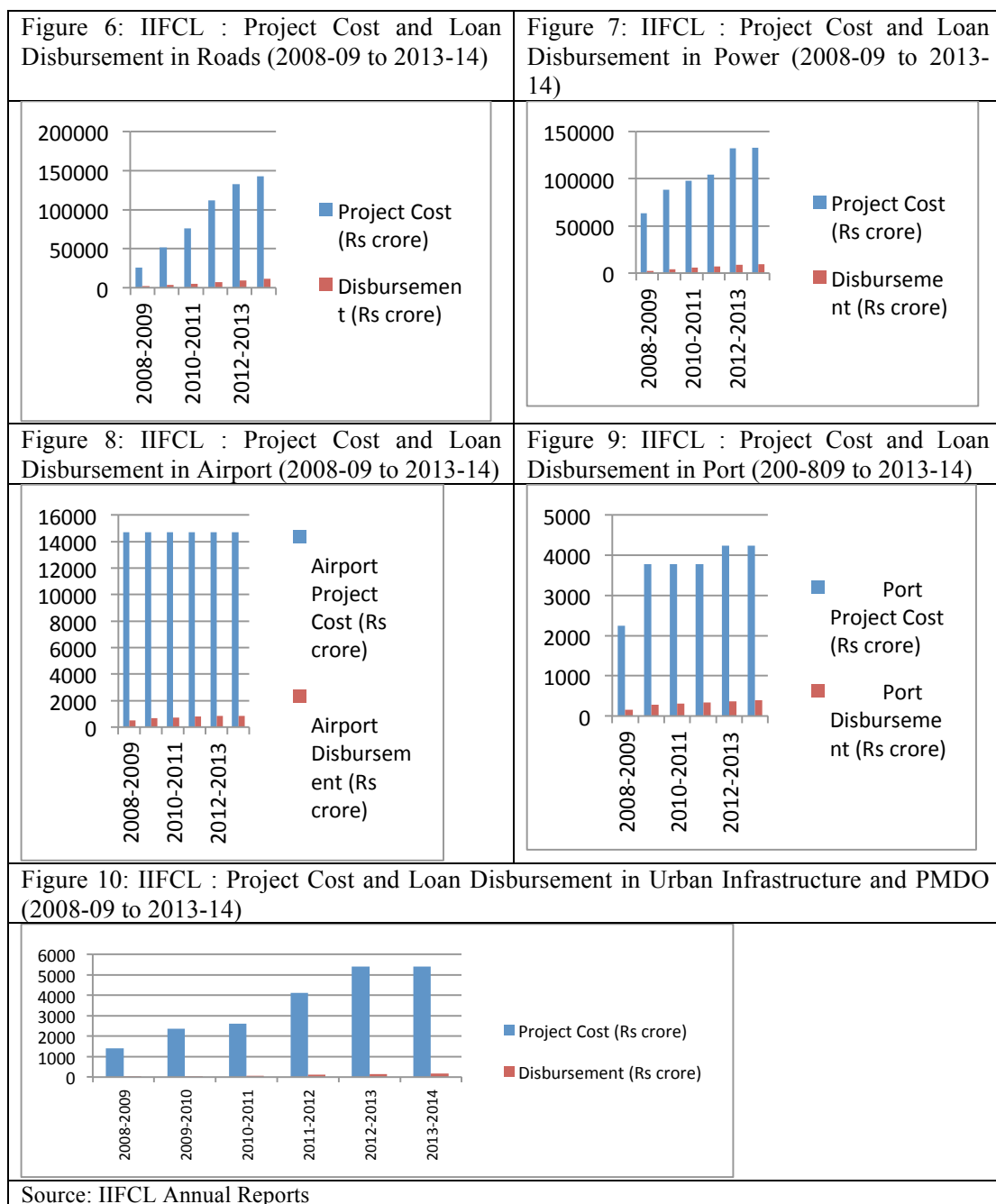
The success of IIFCL lies in leveraging limited public resources for providing the much needed long-tenure debt for PPP projects on an unprecedented scale and at economic costs. IIFCL is perhaps the first-of-its-kind government-owned institution which borrowed extensively from the market without exposing the public exchequer to unmanageable risks. The guarantee exposure of the Government is strictly confined to the limits specified under the Fiscal Responsibility and Budget Management Act 2003 while extension of sovereign guarantee for IIFCL borrowings is justified since the PPP projects it supported were meant to provide services that were hitherto provided by the Government. During this entire process the banks were encouraged to lend in a commercially prudent manner without any Government exposure or interference. Thus the prudential norms normally applicable to lending by banks were not compromised. Yet by combining IIFCL debt with the debt raised by project sponsors from other financial institutions a mutually reinforcing arrangement is brought about. This initiative should be regarded as a resounding success as it played a catalytic role in enabling a three-fold jump in the flow of private capital to infrastructure projects which not only helped in doubling the total investment in infrastructure between the two Five Year Plans but also increased its share in GDP from five per cent to seven per cent. In effect this initiative is one of the principal contributors to India being recognised as the highest recipient of PPP investments during the recent years.

Sustainability in IIFCL's business

IIFCL has adopted Environmental and Social Safeguards Framework that provides to it an enabling mechanism to meet environmental and social safeguard requirements associated with projects that it finances. Given the fact that IIFCL lends as a part of consortia and very seldom works independently may limit the freedom to exercise the sustainability criteria of its own. Among the portfolio of the projects it has supported include urban mass transportation systems and urban water supplies projects, agricultural infrastructure, special economic zones, among others. Being a very young NDB having been in existence for less than a decade, it is still evolving its business practices and standard operating procedures. The information available does not allow segregation of its exposure by the sustainability criteria and has to wait for more information to be provided by the company that was not available at the time of writing.

Project Financing

- Road – IIFCL as a part of consortia, is helping development of around 20000 km of roads. Besides three expressways are being fast tracked viz the eastern expressway covering eastern Uttar Pradesh and Haryana the Meerut-Delhi expressway and the Vadodra-Mumbai expressway.
- Power – IIFCL's lending as a part of consortium is helping development of around 40000MW of power generation capacity
- Airport – Construction of Greenfield airports has been the need of the hour to bridge the gap between available airport capacity and estimated demand. IIFCL has provided financial assistance to Delhi, Mumbai and Hyderabad airports.
- Urban Infrastructure – IIFCL has contributed to urban development by investment in water distribution projects and metro connectivity projects namely Hyderabad Metro.
- IPL (IIFCL Projects Limited) has been financing a portfolio of 27 projects (including 22 projects on behalf of IIFC (UK) Ltd) across power tourism Agri-Infra, SEZ, port, fertilizers and urban infra sectors with aggregate project cost of 1.37 lakh crores.



7. Concluding Remarks

This paper has reviewed the role of NDBs in infrastructure financing in South Asia with a special focus on India in the context of need to close wide infrastructure gaps and staggering resource requirements to close them. It would appear that the NDBs have evolved in terms of their functions, sources of finance, business models and lending policies. Starting with the objective of supporting industrialization, new age NDBs support infrastructure development and sustainable

infrastructure investments through a variety of ways and through funds mobilized from diverse domestic and international sources. These NDBs are complemented by a number of NDBs catering to specific infrastructure sectors. The growing focus of the government on harnessing the potential of renewable energy is directing their activities to sustainable infrastructure.

NDBs are raising their funds from domestic and international markets backed by sovereign guarantees, through a mix of infrastructure bonds, green bonds, through new debt mutual funds that help to mobilize funds from insurance companies and pension funds. Besides ECB and intermediating the credit lines provided by MDBs, mobilization of foreign exchange reserves for infrastructure investments has been pioneered in a very unconventional manner through a special purpose vehicle. Infrastructure financing is likely to be boosted further with the recent establishment of a major national infrastructure investment fund by the government to refinance NDBs resources.

NDBs are helping to address the issue of asset-liability mismatch inherent in bank-lending to infrastructure that continues to provide the bulk of debt to infrastructure investments. NDBs have begun to mobilize large scale longer term resources. They are also relieving the balance sheets of banks by through Take-Out finance and through credit enhancement strategies.

The experience shows that NDBs are able to catalyze very large scale of investments with relatively modest funds, working as a part of consortia which also help to diversify risks.

In terms of lessons from Indian experience, NDBs are highly sensitive to the enabling policy framework of the government that can make or mar their viability. Clear policy objectives, framework and support by the government are key to their success. Another constraint faced by NDBs has been a ready pipeline of bankable projects that has led NDBs to establish project development and technical advisory arms that support the project authorities in development of bankable projects. In recognition of this constraint, the government has also established a lending facility for project feasibility preparation. Therefore, NDBs' contribution to infrastructure development goes beyond providing financial resources.

Given the enormity of the infrastructure challenge faced by India requiring mobilization of nearly \$ 3.5 trillion by 2030, there is need for huge mobilization of resources. In that context, establishment of new MDBs including New Development Bank of BRICS and AIIB is an important development of interest for India. As a founder member of both the institutions, India has much to contribute to their evolution as robust financial institutions equipped to play an important development role complementing the existing MDBs. India has also much to benefit from arrival of the new players on horizon for lending for infrastructure development in developing countries. The new banks may draw upon the professional expertise available with Indian NDBs as they establish their own teams. They may also develop synergistic relationship with Indian NDBs like the existing MDBs have developed providing them lines of credit for infrastructure development for on-

ward lending. In particular, there would be huge opportunities of cooperation between the Indian and South Asian NDBs and the new banks in the sustainable infrastructure development given the huge requirements of funds in the region.

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