

FACT SHEET

Brick sector in Nepal



Sector overview

Number of brick kilns (2018)	1,349
Annual brick production (2018)	5.14 billion bricks
Annual domestic consumption	Not available
Annual brick demand (2015)	4.37 billion bricks
Animals utilized (2017)	3300 animals
Number employed (2018)	246,000 people
Men employed (2007)	54% of total
Women employed (2007)	46% of total
Admin and others (2018)	15,000 people
Moulding (2018)	122,000 people
GB transport (2018)	60,000 people
Firing (2018)	31,000 people
Fired brick transport (2018)	18,000 people
Sector investment (2013)	USD 100.42 million ¹
Value of sales (2018)	NPR 61.74 billion/USD 533.13 million
GDP contribution (2018)	2%
Tax contribution (2018)	NPR 700 million/USD 6.04 million
Coal consumption for firing bricks per annum (2018)	504,750 tonnes
Annual coal expenses (2018)	NPR 13.63 billion/USD 117.69 million
Estimated consumption of other fuels (sawdust, bagasse, rice husk, firewood, and lapsi) and annual expenses	Not available



¹Exchange rate of NPR 115.8 to USD 1 as on 13 September 2018



Policy overview

EXISTING POLICIES

- Industrial Enterprises Act, 2073 (2016)
- Land Use Policy, 2069 (2012)
- Environment Protection Act, 2053 (1996)
- Environment Protection Rules, 2054 (1997)
- National Ambient Air Quality Standards, 2069 (2012)
- Labour Act and Social Security Act, 2075 (2017)
- Act Relating to Children, 2075 (2018)
- Child Labour (Prohibition and Regulation) Act, 2056 (2000)
- Child Labour (Prohibition and Regulation) Rules, 2062 (2006)
- Value Added Tax Act, 2052 (1995)
- Value Added Tax Rules, 2053 (1996)
- Animal Welfare Directive, 2073 (2016)

RELATED GUIDELINES

Ministry of Population & Environment and the Ministry of Labour & Employment:

- Standard on Chimney Height and Emission for Brick Industry, 2074 (2017)

Guideline on Occupational Safety and Health for Labourers in Brick Industries, 2074 (2017)

POLICIES IN THE PIPELINE

- Land Use Bill (Draft)
- Child Labour Inspection and Monitoring Guidelines (Draft)



Technology

Technology	Number	Energy ² consumption (tonnes)	Number employed
Fixed Chimney Bull's Trench Kiln (FCBTK) (natural draft)	899	363,830	179,800
FCBTK (forced/induced draft)			
Zig-zag FCBTK (natural draft)	289	85,147	57,800
Zig-zag FCBTK (forced/induced draft)			
VSBK	25	5,714	1,700
Hoffmann kiln	6	10,624	1,200
Tunnel kiln	3	7,139	300
Hybrid HK	2	2,266	200
Clamp kiln	125	30,029	5,000
MC BTK	7	4,622	1,400

Emissions and the environment

- Brick industries in the Kathmandu Valley are the third largest source of suspended particulate matter (SPM) and PM₁₀ emissions.

Major stack emissions: SPM, black carbon, sulphur dioxide, and carbon dioxide

Main fugitive emissions: Particulate matter (primarily PM₁₀ and PM_{2.5})

²Based on specific energy consumption and equivalent to coal consumption



Labour and working conditions

- Jurisdiction: Ministry of Labour, Employment and Social Security
- Both accompanied and unaccompanied children are engaged informally as labourers. The Act Relating to Children, 2075 (2018) defines children as persons below 14 years of age. The National Labour Academy and the School of Planning Monitoring, Evaluation and Research conducted a rapid assessment of children in the brick industry in 10 districts. The findings of the assessment were published in 2012 by World Education and Plan International. According to the report, an estimated 28,000 children are engaged informally in the brick sector. A comprehensive report based on research on the employment relationship in brick production in Nepal, carried out by the Central Bureau of Statistics (Government of Nepal) with financial support of ILO and UNICEF, is due to be released this year. The report will provide nationally representative and reliable data on child labour and forced labour.
- Standards on workplace facilities, occupational safety and health, employment conditions and labour management practices set by the government should be met.

Industry promotion, monitoring and enforcement

- The brick sector is considered an informal sector mainly due to its operating practices.
- Jurisdiction: Multi-stakeholder representation in the Industrial Promotion Board (IPB), Ministry of Industry, Commerce and Supplies, for major policy decisions about registration and technology
- Registration: Under the new federal structure, registration of new brick kilns (with less than NPR 50 million capital) is done at the Office of Cottage and Small Industries (OCSI). Structurally, the OCSI is under the Upabhokta Heet Samrakshan Nirdeshanalaya (Consumer Welfare and Protection Directorate) of the Ministry of Industry, Tourism, Forest, Environment and Trade at the provincial level. The existing guidelines and procedures for registration are being reviewed at the directorate/province level. Under the new structure, the IEE should be approved at the provincial level.
- Representative bodies: district level associations; Federation of Nepalese Brick Industries (FNBI) at the national level; VSBK Entrepreneurs' Association and Bhuse Itta Byawasayi Mahasangh (Federation of Husk Brick Kilns).

	SPM emission standards (mg/Nm ³)	Chimney height (m)
	2008	2017
Bull's Trench Kiln, forced draft (fixed chimney)	600	350
Bull's Trench Kiln, natural draft (fixed chimney)	700	500
Vertical Shaft Brick Kiln (VSBK)	400	250
Hoffmann Kiln, forced draft		350
Hoffmann Kiln, natural draft		500
Hybrid Hoffmann Kiln (HHK)		200
Tunnel kiln		100



- The recent Industrial Enterprises Act, 2073:

Enables IEE and EIA after industry registration, and “no work no pay” provisions.

Tax incentives (reduction of up to 50% from taxable income) to invest in pollution reduction, energy-efficiency measures, entrepreneurial development, research and development, and technology innovations.

- Tax jurisdiction: The sector falls under the Value Added Tax (VAT) regime. In the context of federal state structuring, the local government has levied taxes under different headings.

Good practices

Technology

- Post earthquake, industries are rebuilding kilns based on an engineered design that is energy efficient, environment friendly and structurally safe.

- About 289 of the 1035 FCBTKs converted to zigzag technology, reducing 1,134 tonnes of dust particles (SPM), with annual savings of 19,986 tonnes of coal valued at NPR 539 million in September 2018. Newer technologies such as Tunnel and Hybrid Hoffmann Kilns (HHK) are also being adopted.
- This effort is mostly initiated by the private sector; policy support could speed up this process and make it more sustainable.

Labour and working conditions

- In July 2018, the Ministry of Labour, Employment and Social Security (MoLESS) and the Federation of Nepal Brick Industries (FNBI) aligned with the Brick Sector Master Plan (2018–28) and signed an agreement to end child labour in the brick industry. The FNBI developed the final draft of the Social Code of Conduct (CoC) for acceptable employment conditions.
- Improved working conditions and introduction of semi/mechanized systems are seen to contribute to higher worker retention rates.



Issues and opportunities

Technology

- Policies promoting conversion to zig-zag technology can potentially save 98,962 tonnes of coal valued at about NPR 2.67 billion (USD 23.07 million) annually. An investment of around NPR 1.49 billion is needed to convert the remaining FCBTKs; the government could potentially compensate this amount in exchange for convertible currency savings on coal imports.

Emissions and the environment

- Technology-based standards enable industry regulation, but operating practices largely determine environmental performance. Establishment of emission-based standards listing permitted technologies would help enforce standards.
- Long-term and time-bound emission reduction plans can pave the way for smooth technology transformation without posing investment risks.

Labour and working conditions

- Policies and practices can help introduce and scale up public-private partnerships for providing childcare facilities and improving access to education for the children of brick kiln workers
- Some standards and clauses in the Guidelines for the Occupational Safety and Health of Brick Industry Workers are reportedly non-feasible in the context of Nepal's brick kilns, and should be revised.
- Introducing skills-based high school education can help limit the employment of minors, address unemployment and labour shortages, and encourage a local workforce

Industry promotion, monitoring, and enforcement

- Local governments benefit from cleaner environments and local revenue collection, and are mandated to strengthen monitoring, enforcement and incentive delivery mechanisms, as well as to take action against non-registered kilns or kilns that use banned technologies.
- Fiscal incentives provided by the Industrial Enterprise Act to reduce pollution can be linked to technological shifts. Such fiscal and non-fiscal incentives (e.g., hassle-free registration) could expedite the rate of adoption of cleaner technologies.



Long-term and time-bound emission reduction plans can pave the way for smooth technology transformation without posing investment risks.

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