



Ministry of Industry and Trade



Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany



Legal framework and regulations promoting bioenergy development in Viet Nam



CONTENTS

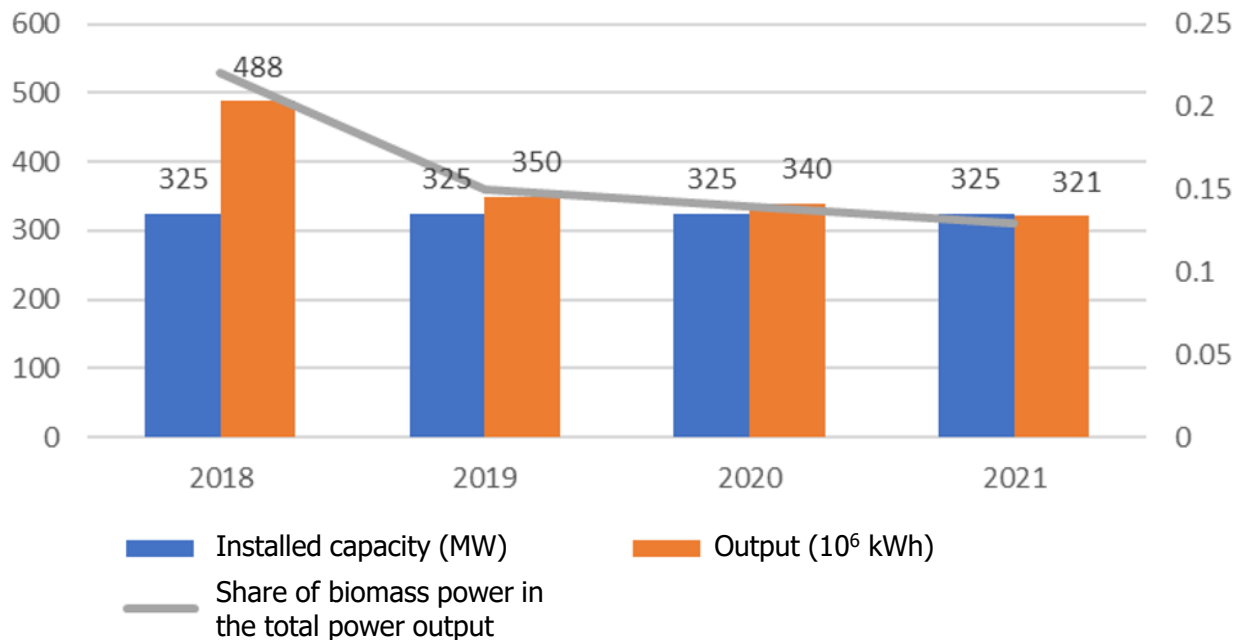
1. The status of bioenergy development in Viet Nam
2. Orientation for bioenergy development
3. Barriers
4. Proposals

CONTENTS

1. The status of bioenergy development in Viet Nam
2. Orientation for bioenergy development
3. Barriers
4. Proposals

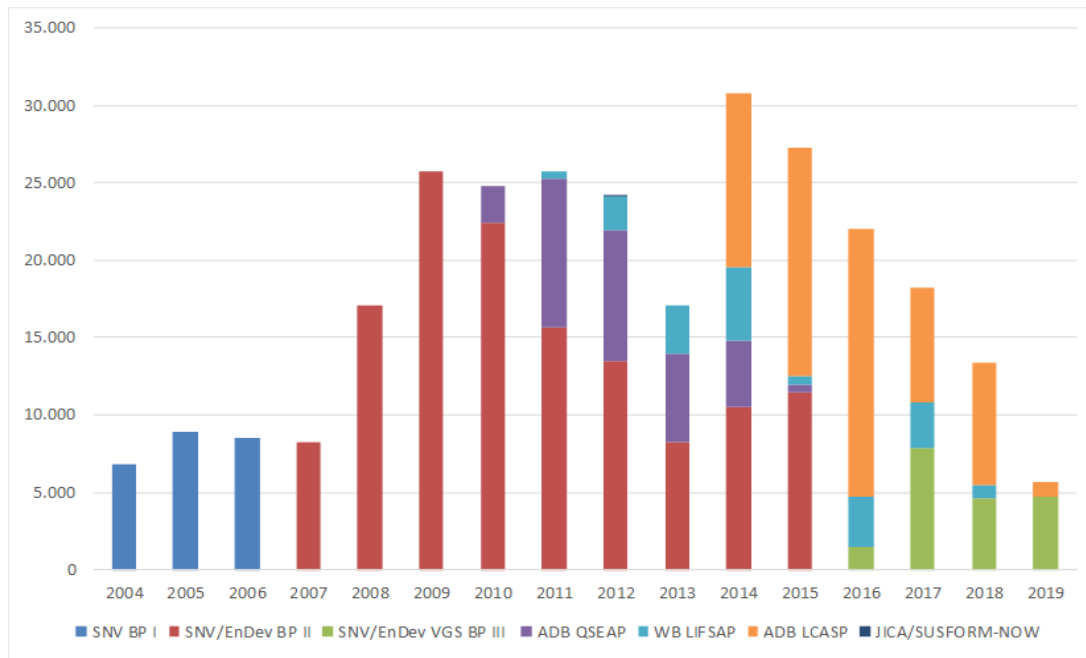
The status of bioenergy development in Viet Nam

THE DEVELOPMENT OF BIOMASS POWER PLANTS



The status of bioenergy development in Viet Nam

NUMBER OF SMALL BIOGAS PLANTS



2021 Installed capacity

Source	Installed capacity (MW)	Percentage (%)
Hydropower plants	17,491	22.36
Coal-fired power plants	25,397	32.47
Oil-fired power plants	1,579	2.02
Small hydropower plants	4,648	5.90
Gas-fired power plants	24	0.02
Gas Turbines	7,398	9.46
Biomass power plants	325	0.42
Wind power	4,126	5.27
Solar farms	8,872	11.38
Rooftop PV	7,760	9.92
Imported power	572	0.73
Diesel	24	0.03
Total	78,219	100

2021 Output

Source	Generation	%
Hydropower plants	78,553	30.59
Coal-fired power plants	119,024	46.36
Gas Turbines	26,315	10.25
Wind farms	3,344	1.30
Solar farms	14,848	5.78
Rooftop PV	12,940	5.04
Biomass power plants	321	0.13
Diesel	5	0.00
Imported power	1,403	0.55
Total	256,753	100%

Bioenergy potential in Viet Nam

Potential of biomass power plants (by 2035)	Capacity (MW)
Rice husk (Source: IE 11/2021)	370
Firewood from forestry (Source: IE 11/2021)	3,360
Bagasse from the sugar industry (Source: IE 11/2021)	470
Rice straw (Source: IE 11/2021)	1,324
Fuelwood from fuelwood plantations (Source: IE 11/2021)	1,300
Other agro-cultural residues (Source: IE 11/2021)	360
Pulp and paper industry (Source: Nguyen Thuy Hien, 2005)	200
Biomass co-firing in coal-fired power plants using exported wood pellets / 3.0 million tons in 2020 (Source: FutureMetrics, USA, 2021)	900
Biogas to bioenergy (Source: GIZ, 2021)	1,377
Total potential	9,661
Bioenergy potential in comparison with coal-fired power in 2020	47.1%
Bioenergy potential in reducing CO2 emissions from coal-fired power	47.1%

Source: listed in the table, Bloomberg, Estimates and calculations of E.Quadrat

CONTENTS

1. The status of bioenergy development in Viet Nam
2. Orientation for bioenergy development
3. Barriers
4. Proposals

Key policies and mechanisms supporting bioenergy in Viet Nam

Orientations of the national energy development strategy to 2030 and outlook to 2045 (Resolution 55, dated February 11, 2020)

- Encouraging the development of **biomass energy**
- Promoting investment in **biomass power plants**
- Focusing on the **use of biomass-based cogeneration**

Viet Nam National Renewable Energy Development Strategy (VREDS) to 2030 with a vision to 2050 (Decision 2068, dated November 25, 2015)

- The **share of biomass-based power** is expected to reach approximately 3.0% by **2020**, **6.3%** by **2030**, and **8.1%** by **2050**.
- The **share of biomass-based heat** is expected to reach approximately 17% by **2020**, **14%** by **2030**, and **12%** by **2050**.

Key policies and mechanisms supporting bioenergy in Viet Nam

National Power Development Plan for the 2011-2020 period, with vision to 2030 (revised) (Decision 428, dated March 18, 2016)

- The share of **biomass-based power** is expected to reach approximately **1% (2020)**, **1.2% (2025)**, and **2.1% (2030)**.
- Further development of biomass-based power through **the application of cogeneration in sugar mills and food processing plants**, as well as **biomass co-firing in coal-fired power plants**, etc.

Key policies and mechanisms supporting bioenergy in Viet Nam

- ✓ Vietnam Electricity (EVN) buys the total power output from renewable energy plants.
- ✓ The duration of power purchase agreement is 20 years.
- ✓ Electricity tariff is adjusted according to the USD/VND exchange rate.
- ✓ Investment capital and tax incentives (import tax exemption/reduction, corporate income tax).
- ✓ Land incentives: land use fee exemption/reduction.

FIT for bioenergy development

Type of renewable energy	Status		FIT (UScents/kWh)	Note
	At present	Proposals		
Biomass	FIT (CHP)		<ul style="list-style-type: none"> - Combined heat and power (CHP): 7.03 - No CHP: 8.47 	Decision 24/2014/QD-TTg dated March 24, 2014 and Decision 08/2020/QD-TTg dated March 5, 2020
Waste	FIT		<ul style="list-style-type: none"> - Solid waste landfill: 7.28 - Direct combustion: 10.05 	Decision 31/2014/QD-TTg dated May 5, 2014
Biogas		x	None	

CONTENTS

1. The status of bioenergy development in Viet Nam
2. Orientation for bioenergy development
3. Barriers
4. Proposals

Barriers

- ✓ Lack of stability and sustainability in fuel supply;
- ✓ Seasonal fluctuation of fuel prices
- ✓ Unattractive incentive mechanisms
- ✓ Bagasse-fired power plants are in operation during in-season and off-season, but currently there is no incentive mechanism
- ✓ Lack of incentive mechanisms for biogas-based power
- ✓ Inadequate assessment of the potential of pellets as a replacement for coal in coal-fired power plants.

CONTENTS

1. The status of bioenergy development in Viet Nam
2. Orientation for bioenergy development
3. Barriers
4. Proposals

Proposals

- Turning waste into electricity brings many benefits → incentive mechanisms are needed
- FIT for biomass requires reassessment and should not be based on technology
- “Additional bonuses” should be considered for advanced and highly effective technologies
- Incentive mechanisms for biogas development should be promulgated soon
- Incentive mechanisms for encouraging coal-fired power plants to partially replace their input fuel with pellets

Thank you!

For more information, please visit:

<http://gizenergy.org.vn/en/>

