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Waste to Energy 2021/2022

Technologies, plants, projects, players and backgrounds of the global thermal waste treatment business

Extract

14th edition, 2021

Waste to Energy 2021/2022

The leading standard reference in the WtE industry. The updated 14th edition includes:

- A detailed and comprehensive forecast of the global market development by country until 2030, including the evaluation of annual new constructions and extensions, capacities, decommissionings and investment volumes.
- An overview of more than 2,500 waste treatment plants and more than 1,000 planned projects worldwide.
- An analysis of different treatment technologies as well as the description and market shares of all important operators and technology providers.
- An explanation of backgrounds and operating modes of thermal waste treatment, furthermore an overview of market factors, investment and operational costs and revenues (with exemplary calculations).
- **In addition to the report, all customers will receive free access to ecoprolog's online database waste & bio Data (WtE module) for one year.** Find detailed data on all plants and projects, including capacity, status, start of operation, technology, flue gas cleaning, plant manufacturer, operator, and more. Current projects are described within the scope of a project tracker. All these data are updated on a weekly basis. Please find a trial version [here](#).
- Additionally, these data can be purchased as MS Excel file.

The study is available in English language starting from 4,200.- € plus VAT. Subscribers of ecoprolog's w&b Monitor will receive a discount starting from 600.- €. Further price reductions are possible with a regular subscription to the study. **Please find detailed price and product information at the end of this extract.**

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Vietnam

Last update: 11-2021

Inhabitants [million]	96,2	Number of waste incineration plants	2
Municipal solid waste [1,000 t]	23,600	Incineration capacity [1,000 Mg/a]	1,588
of which thermally treated [1,000 t]	n/a	Average age of incineration lines	2
Electricity from waste 2019 [GWh]	-	Share of total electricity production 2019 [%]	-
Heat from waste 2019 [TJ]	-	Share of total heat production 2019 [%]	-

Management summary

After the 2014 feed-in tariff reform, Vietnam faced a project boom with the first plant becoming operational in 2018. For the years to come, we expect an increasing number of commissionings, mainly initiated by Chinese project developers.

Background / market factors / legal framework

According to a report of the Ministry of Natural Resources and Environment, MSW amounted to 23.6 million tons in 2019, up from 16.1 million tons in 2010. Reasons for this growth is recent years' growth of the national economy and the increasing urbanisation in the country. Before the Covid 19-pandemic, between 2012 and 2019, Vietnam had average growth rates of 6.5% per year. More than 50% of the waste is produced in urban areas and more than one third of the waste is produced in Hanoi and Ho-Chi-Minh-City alone. The MSW in Vietnam has a high moisture content of 60 to 70%.

According to the report, the waste collection rate in Vietnam is 92%, while the collection rate reaches 100% in urban areas. In contrast, an earlier report of UN Environment from 2017 estimated the collection rate to be 80-82% only in urban areas.

If collected, landfilling remains the main form of waste treatment in Vietnam, with a share of 71% of domestic waste. In the rain season particularly, when dumpsites are flooded, this can lead to serious pollution and health problems and thus is an urgent issue. In total, there are 1,322 waste processing facilities, while 904 of them are landfills. However, only 20% of them are considered sanitary landfills.

[...] More information is provided in the report

Plants

In 2018, the first modern WtE plant in Vietnam went online in the city of Can Tho, the fourth largest city in Vietnam. The project was developed by China Everbright. Furthermore, according to news reports, commissioning of the Soc Son WtE facility close to Hanoi started in May 2021 and shall be finished by the end of 2021. The plant has a capacity of 1,46 million t/a.

According to information of the German public development cooperation agency GIZ, even before 30 small-scale incinerators for solid waste installed in rural areas of Vietnam were operational.

[...] More information is provided in the report

Market development

There is no doubt that Vietnam has a great potential for WtE solutions, especially in the urban areas. 10 cities in the country have more than 300,000 inhabitants. Hanoi and Ho Chi Minh City have a total population of more than 13.5 million.

The feed-in tariff introduced in 2014 has resulted in certain dynamics on the Vietnamese market, with an especially strong competition in the large cities. In the past 3 years, information was published on 16 WtE projects all over the country, with a focus in the two metropolitan areas of Hanoi and Ho Chi Minh City. As of November 2021, we have information on 3 further WtE projects under construction.

[...] More information is provided in the report

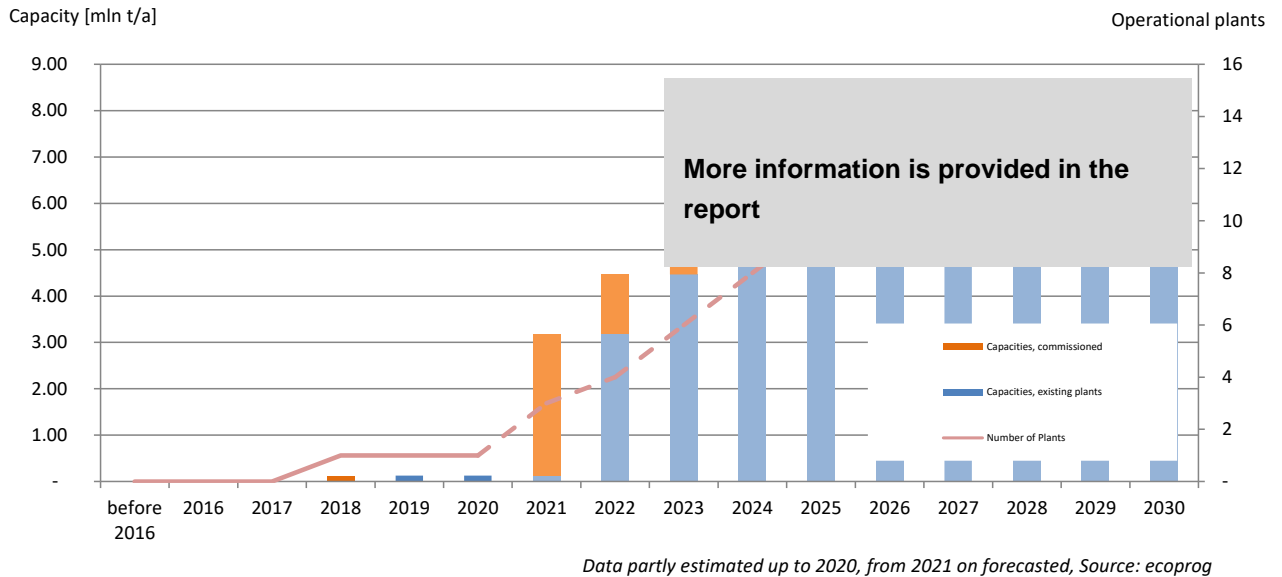
Figure 88: Project outlook Vietnam

#	Project	Unit / plant*	Capacity (t/a)	Start	Status
1	Hanoi Soc Son 2	plant	1460000	2021	under construction
2	Ho Chi Minh City Tam Sinh Nghia Investment	plant	1600000	2021	under construction
3	Ho Chi Minh City Vietstar	plant	1280000	n.a.	under construction
4	Bac Ninh Province	plant	160.000	n.a.	under construction
5	Nghia Ky	plant	n.a.	n.a.	under construction
6	Hanoi Xuan Son	plant	365.000	2022	approved

More information is provided in the report

*As of December 2021
 **“Plant” refers to a completely new facility to be built while unit refers to a new unit to be installed at an existing plant. More details for all projects and weekly updates are also provided in our online database to which you have access.*

Figure 89: Development of plants and capacities in Vietnam



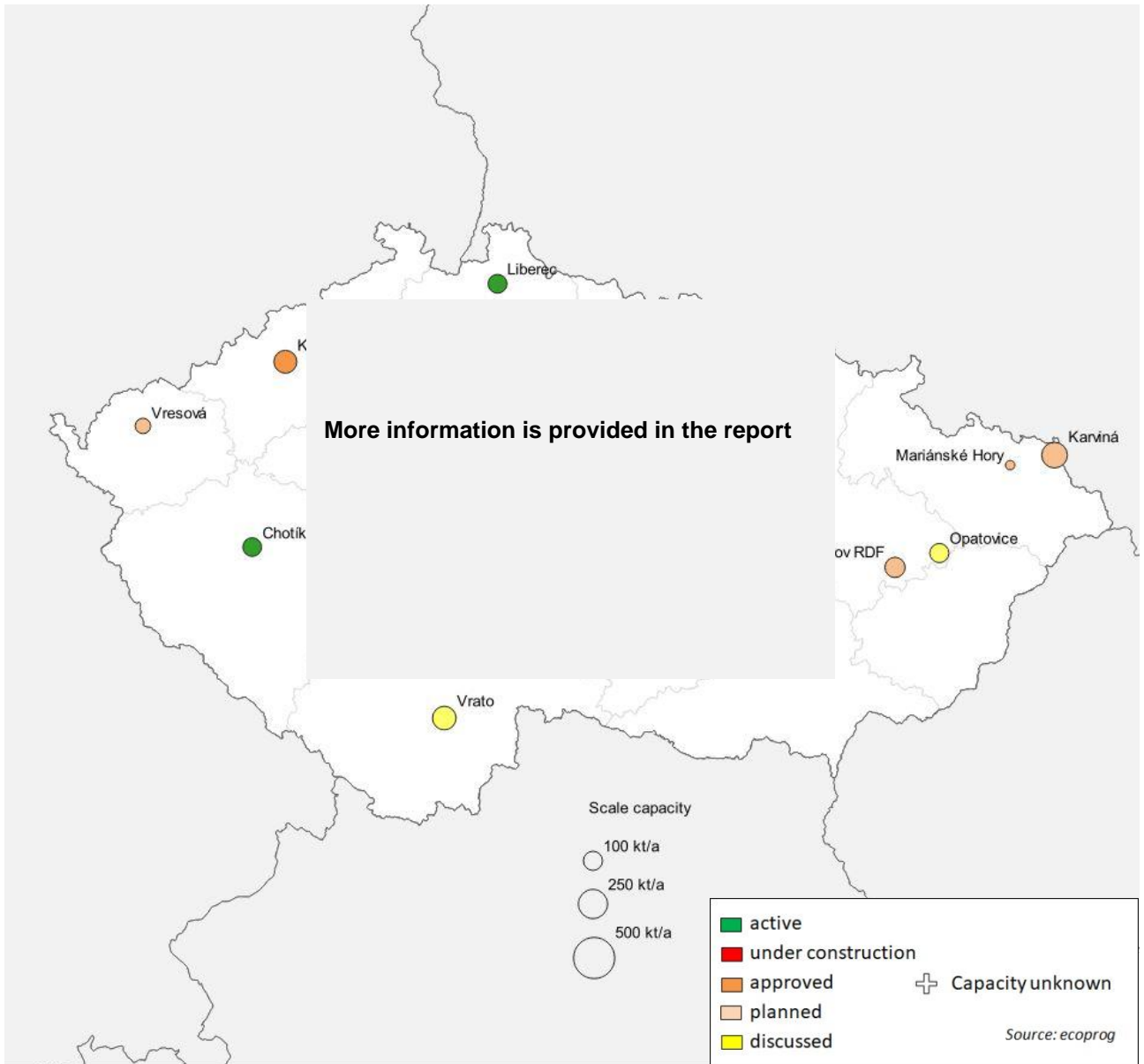
Competition

Vietnam has attracted interest among established WtE market players as well as larger local institutions and companies from other sectors such as the energy or construction branch, e.g. Tasco JSC, for many years now.

In September 2021, Thailand-based engineering company TTCL was awarded the EPC contract for the Bac Ninh project.

[...] More information is provided in the report

Figure 118: Locations of plants and projects in the Czech Republic



[...] More information is provided in the report



- 1 Waste-to-Energy
- 2 MBT plants (u.p.)
- 3 Sorting Plants
 3. 1 Dry Recyclables (u.p.)
 3. 2 Plastic (u.p.)
 3. 3 Paper (u.p.)
- 4 Recycling plants
 4. 1 Plastic (u.p.)
 4. 2 Paper (u.p.)
- 5 Biomass-to-Power
- 6 Biogas / Anaerobic digestion

WtE module of ecoprogram's w&b Data

Search

Country Filter

Plant	
Name	Cheneviers Aire-la-Ville
Country	Switzerland
Province/Region	Geneva
Status	active
Start of operation	1978
Input, capacity [t/a]	278.000
Gross heat production [MW]	n.a.
Power generation capacity [MW]	31,0
Heat production capacity [MW]	17,2
Heat use category	district heating CHP

Remarks: The electricity output covers up to 15% of Geneva's demand. Steam is sold to Cadom SA for district heating. This plant will be replaced with the new facility Cheneviers 2 at the same location (for further information see data entry Cheneviers 2). According to a planning paper of the Swiss association of WtE operators VBSA from mid 2020, the plants capacity will be reduced by about 90,000 t/a due to a plant renewal. The commissioning is planned for 2024.

Unit 1	
Status	shut down
Year of Awarding	n.a.
Start of operation	1978
Type of thermal process	Grate
Technology	horizontal grate
Technology provider	Martin, Eneritech, Von Roll
Power generation technology (PGT)	n.a.
PGT provider	n.a.
Flue gas cleaning technology(FGC)	Wet Scrubbing / Selective Catalytic Reduction
FGCT provider	Lurgi, CTU
Gross heat production [MW]	n.a.
Power generation capacity [MW]	n.a.
Heat production capacity[MW]	n.a.
Remarks:	n.a.

Downloads

- WtE Project Tracker
 701.50 KB
- WtE, List of Active Plants
 848.00 KB

In addition to the report, you will receive access to waste & bio Data (WtE module) for one year.

This is where detailed data on the plants and projects is available, related to, for instance, capacity, status, start of operation, technology, flue gas cleaning, plant manufacturer and operator.

Current projects are described within the scope of a project tracker. All these data are updated on a weekly basis. Please find a [trial version of waste & bio Data](#) on our website.

Price and product information

You can order the market report here:

<https://www.ecoprolog.com/publikationen/energiwirtschaft/waste-to-energy/order-waste-to-energy.htm>

Price model: One-time purchase

- Single-user version: 4,200.- €*
- Company version: 8,400.- €*
- Corporate version: Price on request

Product information:

Single-user copy: personal copy (personalised and password-protected PDF file, sent via email)

Company version: company-wide copy (legal entity), PDF file, sent via email

Corporate version: for different, legally connected companies (e.g. sister companies, subsidiaries abroad). Price depends on number of companies and employees.

Includes 12-month access to waste & bio Data (WtE module) and the WtE project tracker.

Subscribers of ecoprolog's waste & bio Infrastructure Monitor ([Info](#) | [Order](#)) will receive a discount of 600.- € (1,200.- € in case of a company version).

Price model: WtE Package (subscription)

- Single-user version: 3,300.- €* per year
- Company version: 6,600.- €* per year
- Corporate version: Price on request

The WtE Package includes:

- a. Market study "Waste to Energy", updated annually
- b. w&b Monitor (sent weekly) plus access to the w&b online archive with more than 42,000 news items
- c. Access to waste & bio Data (Waste to Energy module) including WtE project tracker

The minimum subscription period is 2 years. The subscription will be renewed for another year if it is not cancelled at least 4 weeks before the expiration date.

Options (for both price models): Additionally, you can order all detailed information on plants and projects in MS Excel (only available in combination with a company or corporate version): 4,200.- €*

Additionally, you can order a printed copy of the study: 150.- €*

* plus 19% VAT for customers within Germany and EU customers without a VAT ID.