



Picture credits: Thermal Waste Treatment Plant in Plzeň, Czech Republic; picture top right: Assembly of a reciprocating grate Vario; picture bottom right: waste grab. All pictures with kind permission of Martin GmbH für Umwelt- und Energietechnik.

Waste to Energy 2020/2021

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

Extract

13th edition, 2020

Waste to Energy 2020/2021

The leading standard reference in the WtE industry. The updated 13th edition includes:

- A detailed and comprehensive forecast of the global market development by country until 2029, including an evaluation of the annual new constructions and extensions, capacities, decommissionings and investment volumes.
- An overview of more than 2,500 waste treatment plants as well as more than 1,300 planned projects worldwide.
- An analysis of different treatment technologies as well as a description and market shares of all important operators and technology providers.
- An explanation of the 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 w&b 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 w&b Data [here](#).
- Additionally, these detailed data can be purchased as MS Excel file.

The study is available in **English language starting from 4,200.- € plus VAT**. Customers of our w&b Monitor will receive a discount starting from 600.- €. Further price reductions are possible within the context of a regular subscription. Please find detailed price information at the end of this extract or the [online order form](#).

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Vietnam

Last update: 10-2020

Inhabitants [million]	96,2	Number of waste incineration plants	1
Municipal solid waste [1,000 t]	22,020	Incineration capacity [1,000 Mg/a]	0,128
of which thermally treated [1,000 t]	n/a	Average age of incineration lines	2
Electricity from waste 2016 [GWh]	-	Share of total electricity production 2016 [%]	-
Heat from waste 2016 [TJ]	-	Share of total heat production 2016 [%]	-

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

All figures on the amount of municipal waste and the waste management system in Vietnam are based on estimations and vary considerably depending on the source. A systematic data management system does not yet exist. According to a report from UN Environment, MSW amounted to 22 million tons in 2016. Contrary, the Waste Management and Environment Improvement Department and the Vietnam Environment Administration estimated the amount of MSW to amount to 44 million tons per year in 2015. We assume that the latter source does not only consider MSW, but also commercial and industrial waste. The MSW in Vietnam has a high moisture content of 60 to 70%.

While the exact amount of waste cannot be confirmed, it is certain that this amount has increased drastically in recent years. One major reason for this growth is recent years' growth of the national economy. Another one is the increasing urbanisation in the country. More than 50% of the waste is produced in urban areas.

The waste collection rate is limited in Vietnam. According to a report by UN Environment, in urban areas, up to 80 to 82% of the municipal solid waste is collected. If collected, landfilling remains the main form of waste treatment in Vietnam. Mostly industrial and household wastes are landfilled together. In the rain season particularly, when dumpsites are flooded, this can lead to serious pollution and health problems and thus is an urgent issue.

[...] 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.

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. Nevertheless, it

remains uncertain which waste streams are incinerated at the facilities. We do not have any information on plants that treat MSW thermally. Due to their low capacities, we assume these facilities to be solid biomass incinerators.

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

Market development

There is no doubt that Vietnam has a great potential for WtE solutions. 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. As of October 2020, we have information on 4 further WtE projects under construction. 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.

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

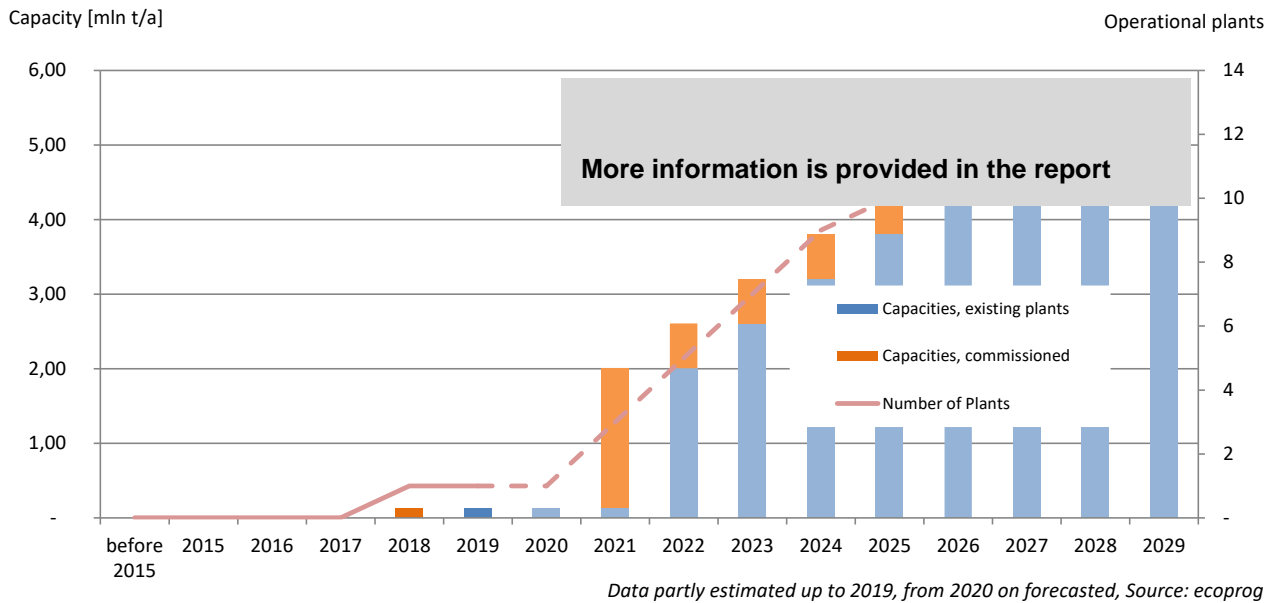
Figure 88: Project outlook Vietnam

#	Plant	Unit / plant*	Capacity (t/a)	Start	Status
1	Bac Ninh Province	plant	160,000	2020	under construction
2	Hanoi Soc Son 2	plant	1,280,000	2020	under construction
3	Ho Chi Minh City Vietstar	plant	1,280,000	2020	under construction
4	Ho Chi Minh City Tam Sinh Nghia Investment	plant	1,600,000	2021	under construction
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

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

*"Plant" refers to a completely new facility to be built while "unit" refers to a new unit to be installed at an existing plant.

Figure 89: Development of plants and capacities in Vietnam



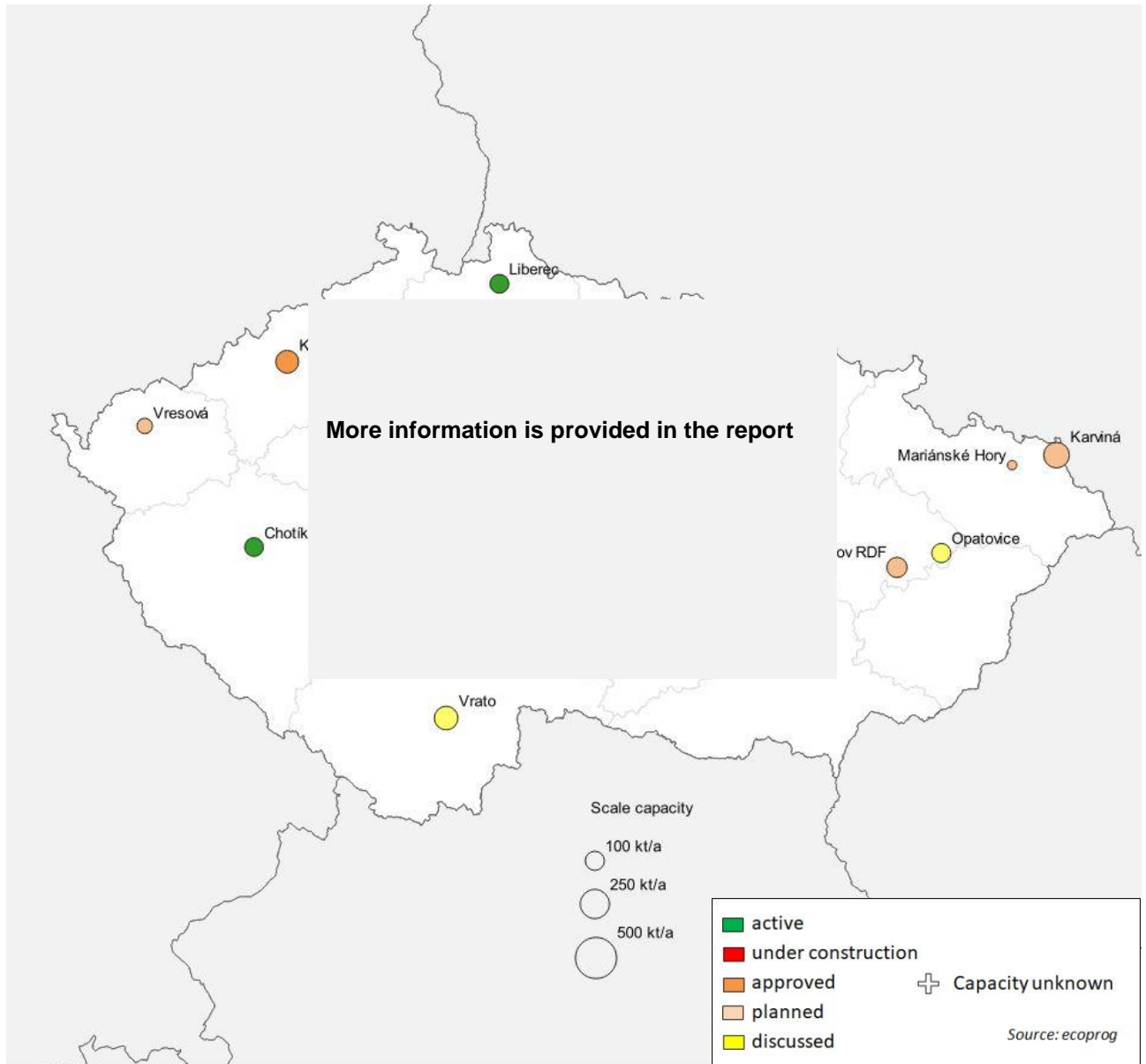
Competition

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.

However, due to costs, marketability and political contacts, of course, Chinese project developers play a dominant role in Vietnam. Most WtE projects in Vietnam result from activities of these players, e.g. China Everbright (Can Tho, Hanoi, Huế) and China Tianying (Bỉm Sơn, Hanoi, Phú Ninh).

[...] 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

Active Plants

You can find further details for all plants, such as technical equipment, manufacturer or address for 12 months at: <https://data.ecoprolog.com/ecopr/>. This data is updated every week. Please use username and password that have been provided by email.

#	Name	Operator	Start	Capacity [t/a]	Units
1	Abilene		2012	42.000	1
2	Agawam	Community Eco Power	1988	130.406	4
3	Alexandria (Minnesota)	Pope-Douglas Joint Solid Waste Board	1987	64.512	4
4	Alexandria (Virginia)	Covanta Alexandra/Arlington, Inc	1988	288.000	4
5	Almena	ZAC, Inc.	1986	31.949	3
6	Auburn	Mid-Maine Waste Action Corporation	1992	64.000	3
7	Babylon	Covanta Babylon, Inc.	1989	240.000	3
8	Bainbridge	Covanta Lancaster, Inc.	1991	384.000	4
9	Baltimore Wheelabrator	Wheelabrator Baltimore	1985	720.000	4
10	Bridgeport	Wheelabrator Technologies	1988	720.000	4

[...] 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

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

WtE module of ecoprogram's w&b Data

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Price and product information

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

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

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

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- b. w&b Monitor (sent weekly) plus access to the w&b online archive
- c. access to w&b Data (WtE module) including 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.

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