



浙江大學  
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# Current State and Future Projections of Waste-to-Energy in Türkiye

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**Global WtERT Congress 2023**

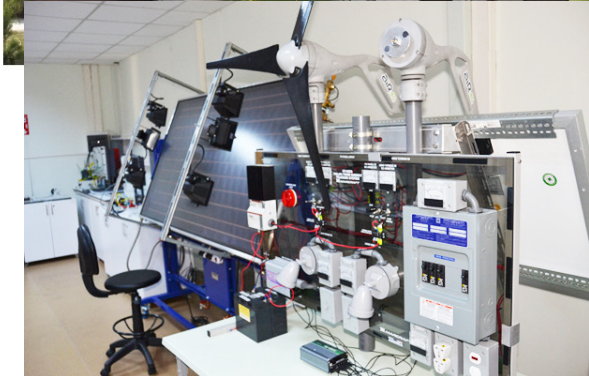
7th of November 2023

# Dr. Samet Öztürk

- 2011 Istanbul Technical University –BS Civil Engineering
- 2014 University of Delaware , MCE – Civil Engineering
- 2019 Columbia University – PhD- Earth and Environmental Engineering
  
- Research areas: Wind energy, offshore wind energy, waste-to-energy, sustainable waste management
  
- Recent peer-reviewed publications:
  - Öztürk, S., Karipoglu, F. (2023). Investigation of the best possible methods for wind turbine blade waste management by using GIS and FAHP: Turkey case. *Environ Sci Pollut Res* 30, 15020–15033 (2023). <https://doi.org/10.1007/s11356-022-23256-6>
  - Öztürk, S. (2023). A SWOT Analysis for Offshore Wind Energy Development: Turkey Case. In: Haddout, S., Krishnamoorthy Lakshmi, P., Hogueane, A.M. (eds) *Climate Change and Ocean Renewable Energy*. CCORE 2022. Springer Proceedings in Earth and Environmental Sciences. Springer, Cham. [https://doi.org/10.1007/978-3-031-26967-7\\_5](https://doi.org/10.1007/978-3-031-26967-7_5)

# Bursa Technical University

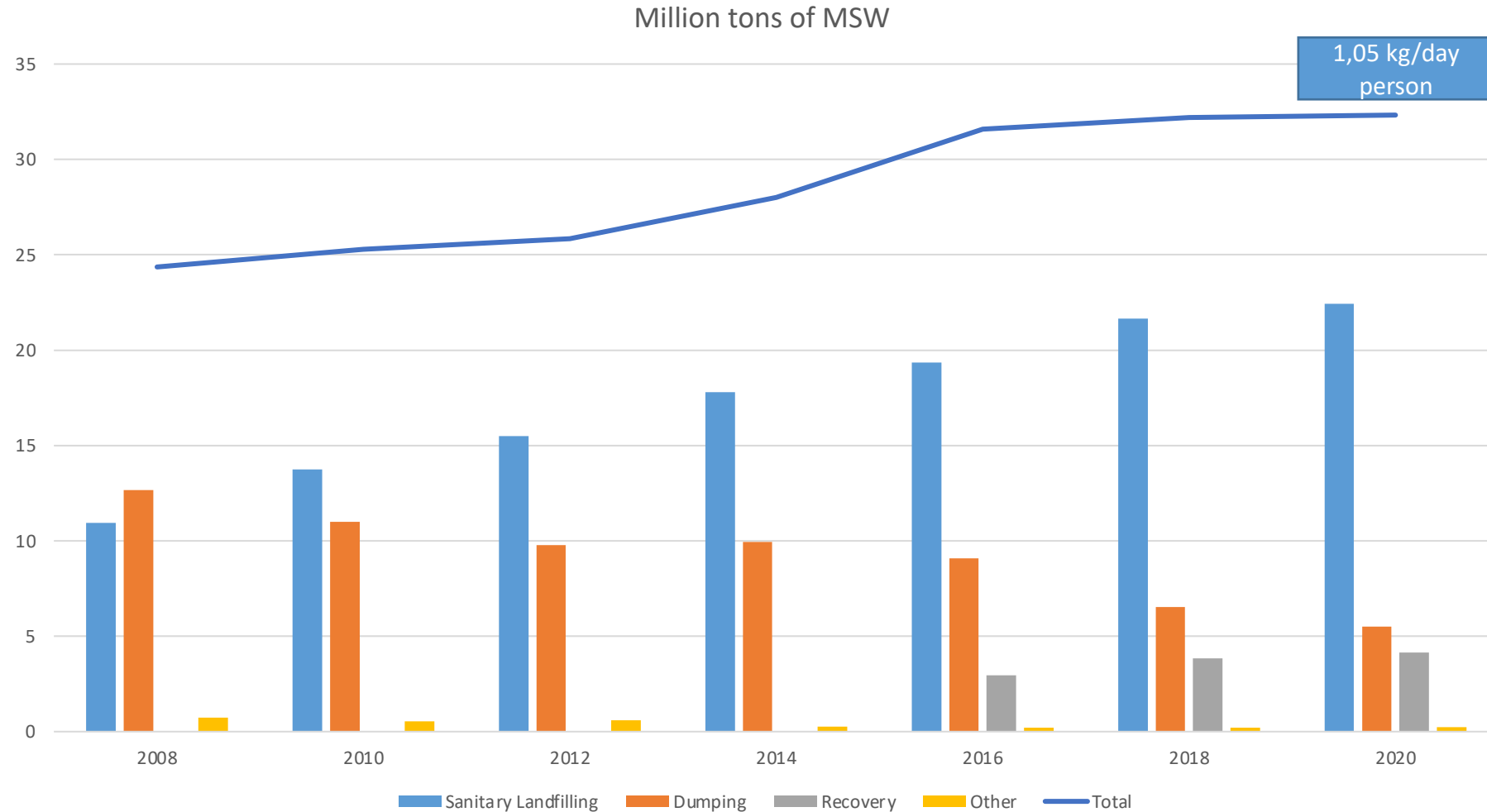
- Established in 2010
- 11,442 student; 13% interntl'; 21% grad; 4,260 alumni so far
- 551 projects
- 15 Departments including Environmental Engineering



# Current state of municipal waste management in Türkiye



# Current state of municipal waste management in Türkiye

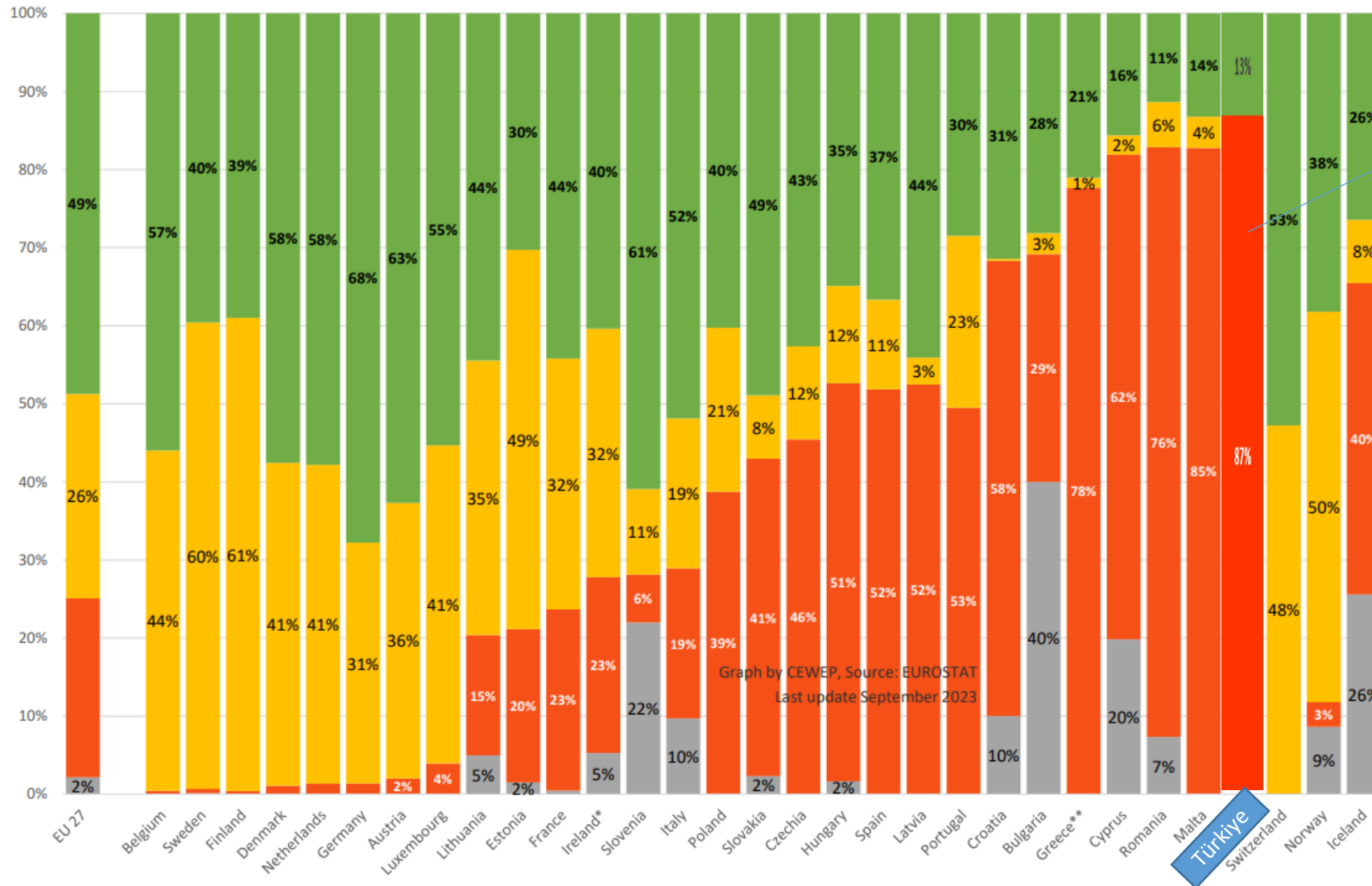




# MSW Management - EU vs Türkiye

cewep

## Municipal waste treatment in 2021



with 2020 data



Percentages are calculated based on the municipal waste reported as generated in the country

\*: last available data 2020  
 \*\*: last available data 2021

Graph by CEWEP, Source: EUROSTAT  
 Last update September 2023

# Current state of WTE in Türkiye

İzaydaş Incineration plant – Kocaeli – clinical/hazardous waste

- Established in 1997
- 5.2 MW Capacity
- 5.4 tons/h – 48,000 tons/year
- About the plant:

[https://www.izaydas.com.tr/files/IZAYDAS\\_TECHNICAL\\_OVERVIEW.pdf](https://www.izaydas.com.tr/files/IZAYDAS_TECHNICAL_OVERVIEW.pdf)



İstanbul WTE plant – MSW – first and only

- Established in 2021
- 77 MW Capacity
- 125 ton/h – 1 million tons/year
- Cost: 300 M Euro
- About the plant: <https://cevre.ibb.istanbul/atik-yonetimi-mudurlugu-sube-mudurlugu/atik-yakma-ve-enerji-uretim-tesisi/>





# Future projections of WTE in Türkiye

## ULUSAL ATIK YÖNETİMİ VE EYLEM PLANI 2023

### National Waste Management Action Plan



Tablo I. Waste management strategies

Yöntemler	Stratejiler
Termal*	Belediye atığı
	1. Öncelikli İller: İstanbul, Ankara, İzmir, Kocaeli
	2. Öncelikli İller: Doğu Karadeniz Bölgesi (İstisna Bölge)
Mekanik Biyolojik Arıtım	3. Öncelikli İller: Tesis kapasitenin 500.000 ton/yıl ve üzerinde olması koşuluyla Adana, Aydın, Balıkesir, Bursa, Gaziantep, Hatay, Kayseri, Konya, Manisa, Mersin, Muğla İlleri.
	Belediye atığı
	Kaynağında ayrı toplanmış biyobozunur atıklar
Biyometanizasyon	365.000 ton/yıl ve üzerinde atık üreten iller (kaynağında ayrı toplanmış en az 100 ton/gün biyobozunur atık)
	Turistik alanlar ve otel bölgeleri
	Hayvansal ve tarımsal atık potansiyeli bulunan iller
Kompost	Kaynağında ayrı toplanan belediye atıklarına ilave olarak tarım atığı, hayvansal gübre ve orman atıkları da dikkate alınabilir.
	İl merkezlerinde kaynağında ayrı toplanmış en az 50 ton/gün biyobozunur atık
	Tarım ve orman alanlarının yoğunluğu
Düzenli Depolama	Tarım, orman ve hayvansal atık miktarları
	Düzenli depolama tesisi olmayan iller

\*İstanbul, Ankara, İzmir, Kocaeli ve istisna bölge illeri için termal bertaraf tesisi kurulması zorunlu olup yukarıda belirtilen diğer iller fizibiliteye göre termal bertaraf tesisi kurabilirler. Yukarıda yer alan iller dışında diğer illerde termal bertaraf tesisi kurulması önerilmemiştir.



# Future projections of WTE in Türkiye

- Project proposal idea:
- We aim to create a web-based site selection for optimal locations for potential WTE plants in Türkiye
  - We had some interactions with the municipality admins in Türkiye
- We would like to apply an international Project call for this idea
- A joint consortium would be ideal
  - EU
  - China
  - Asia
  - NSF
  - Eastern Europe

# Conclusions

- Türkiye is a growing country with nearly 90 millions population – waste increase
- Landfilling and dumping make 87% of MSW Disposal
- There is a big room for WTE applications
- The big Istanbul plant could be a good model for other projects

- Thanks for listening!