
BIOSOLIDS: QUESTIONS & ANSWERS

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Q. How do other states and countries handle biosolids?

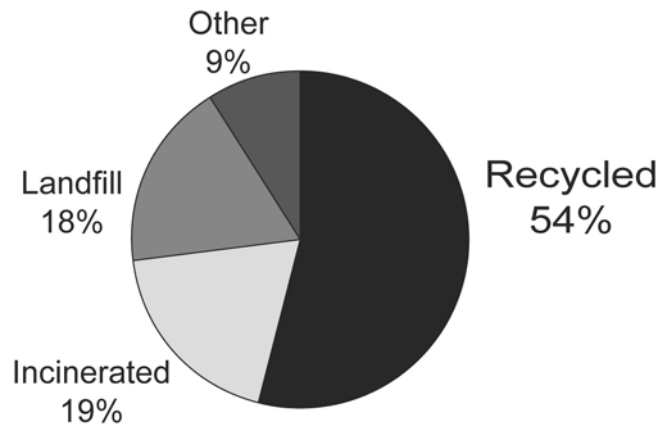
A. The recycling of biosolids is a widespread and accepted practice throughout the United States and the world.

Biosolids in all 50 States

According to the U.S. Environmental Protection Agency, all 50 states have biosolids land application programs. With approximately 7 million dry tons of biosolids produced each year by the nation's wastewater treatment plants, this recycling effort benefits the environment by beneficially using a valuable product that would otherwise take up space in landfills or affect air quality through incineration.

Rich in plant nutrients, most recycled biosolids are land applied on farms and forests as fertilizers and soil conditioners. Smaller quantities are sold as fertilizer and compost through home and garden centers and landscaping services.

Here is how biosolids are used in the United States:¹



**U. S. Biosolids
2005**

A survey by *BioCycle Magazine* found that in the year 2000 almost half of the reporting states, including Virginia, recycled more than half of the biosolids generated. Eight states—Arizona, Colorado, Delaware, Indiana, Iowa, Maine, Oregon and Wyoming—beneficially use over 90 percent of their biosolids.

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Around the World

According to a United Nations report, the land application of biosolids is continuing to grow in Europe² and the agricultural recycling of biosolids is in wide use throughout most western nations, including Canada (43%)³ and Western Europe (34%)⁴. Australia is also developing an extensive biosolids recycling program in response to its need to conserve water and improve the quality of its soils. While the national biosolids recycling rate is 18 percent, Australia's largest city, Sydney, recycles 100 percent of its biosolids.⁵

Luxembourg and Portugal lead Europe by recycling more than 80 percent of their biosolids. Both the United Kingdom and France recycling approximately 50 percent of their biosolids.

Biosolids Management Methods in European Nations (1996)

	Annual Production 1,000 dry tons	Management Method % of total			
		% Recycled	% Landfill	% Incineration	% Other
Austria	320	13	56	31	0
Belgium	75	31	56	9	4
Denmark	130	37	33	28	2
France	700	50	50	0	0
Germany	2500	25	63	12	0
Greece	15	3	97	0	0
Ireland	24	28	18	0	54
Italy	800	34	55	11	0
Luxembourg	15	81	18	0	1
Holland	282	44	53	3	0
Portugal	200	80	13	0	7
Spain	280	10	50	10	30
Switzerland	50	30	20	0	50
UK	1075	51	16	5	28

Source: United Nations, *Biosolids Management: An Environmentally Sound Approach for Managing Sewage Treatment Plant Sludge*

¹ Metropolitan Council website, St. Paul, MN. (Note: Some sources estimate a recycling rate of 60 percent.)

² United Nations, *Biosolids Management: An Environmentally Sound Approach for Managing Sewage Treatment Plant Sludge*

³ CH2MHill Canada. Biosolids Generation, Treatment, Use and Disposal in Canada. Opportunities for Energy Recovery and Greenhouse Gas Reduction Report. Prepared for Environment Canada, 2000.

⁴ United Nations, *Biosolids Management: An Environmentally Sound Approach for Managing Sewage Treatment Plant Sludge*

⁵ Australian Water Association, e-mail, June 26, 2005.

