

Banning Gas-Powered Lawn Equipment

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Presentation Outline:

- Noise and environmental consequences
- Effects of a ban
- Bans in action
 - Within St. Paul
 - Within similar cities
- Next steps/different levels of bans



Environmental Consequences :

- Gas powered lawn equipment uses a two-stroke engine (mixes gas and oil)
 - Emits carbon monoxide, nitrous oxides, carcinogenic hydrocarbons into the atmosphere
 - 1/3 of the fuel used is spewed into the air as unburned aerosol
- Two-stroke gasoline powered leaf blower can burn 6.445 grams of pollution per minute, the 2011 Ford Raptor burns 0.276 grams of carbon per minute.
- Increases risk in cancer, asthma, cardiovascular disease in landscape employees.



Noise motivations:

- Gas powered equipment tends to be a lot louder than electric
- Gas powered blowers 80-90 decibels a scale
 - Talking is usually 60 dBA and Vacuum cleaner is 75 dBA
- Stihls most powerful battery powered backpack leaf blowers are 56-50 dBA
- Gas powered mowers (hand-push) 70-80 dBA
- Gas power riding mowers 90-95 dBA
- Toro's most powerful battery-operated riding or stand-on mower 80 dBA

*it is important to note that the louder noise can reflect the larger capacity and horsepower of gas engines



Guiding Questions :

- How will manufacturers handle demand for electric equipment if a ban is implemented?
- What is the performance comparison between gasoline and electricity? How does the productivity differ?
- How can a ban be equitable given the cost comparison between electric and gas ?
- How can we incentivize purchasing electric equipment?

Electric

\$479.99
59 dBA
188 MPH Air Velocity
Run Time 500 minutes
553 CFM (Air volume at nozzle)



\$2,695.00
Charge time: 220 minutes
with recommended AL
500 Charger
1,520 Wh Capacity
Charger is depleted – no
gradual reduction in power
Weight: 9.5 kg



* Most common equipment used for professional landscape is Stihl and Toro

Gas



\$204.66
69.3 dBA
151-175 MPH Air Velocity
301-500 CFM



\$549.99
75 dBA
238 MPH Air Velocity
677 CFM
9.7 kg





Parks and Rec



Weed Whips
Electric on
the left gas
on the right



Backpack
and
handheld
leaf
blowers



Three Most Cited Disadvantages of Switching from Gas to Electric:

- Price Difference
- Productivity difference
- Charging capability



Bans in action in Saint Paul: Macalester College

- Was able to make the switch because of the Alternative Landscape Grant from the state
 - Spent \$5,000 got \$10,000 worth of equipment
 - Most of the money was used on chargers
- Have kept the gas sitting mowers
 - Estimated it would be \$30,000 for one electric sitting mower
- Weed whips, chainsaws, push mowers, hand-held leaf blowers have electric option
 - Significantly quieter
- No electric equivalent to backpack leaf blower
- Electric chainsaws close equivalent to gas chainsaw
- One battery on the electric hand-held blower lasts throughout the entire day
- Stressed the convenience of electric equipment
 - Less fumes
 - Equipment isn't as hot



Bans in action in Saint Paul: Parks and Rec

- Electric leaf blower does not have the same velocity as a gas leaf blower to handle more commercial landscapes
 - Would not work in fall cleanup or on sand and woodchips
- Electric equipment has more convivence and is nice to have as an option for preference
 - Electric equipment is easier to start
 - Doesn't have a learning curve
 - Noise is only emitted when you are actively using electric equipment
 - Less heavy



Parks and Rec Continued:

- Estimated three batteries per equipment
 - Needing to change the battery three times in one hour versus fueling up one time
- Electric equipment is good for residential
 - Made the comparison of the switch being like the pros and cons of an electric or gas car
- Is dependent on the department of landscape
 - Would not be able to sustain forestry department
- Stressed the equity gap
 - The price of buying new batteries
 - Battery equipment may require more long-term repair and may be more likely to need maintenance



1

Banning Equipment Based on DBA

Banning leaf blowers that produce a certain volume decibel:

Seen in Palm Beach, Montgomery, Portland, Chapel Hill:

- Not allowing the sale of equipment that produces more than 65-70 decibels
- Most gas equipment produces more than 70 decibels



Necessary steps for this for this to be successful

How to make this possible:

- Department to ensure violations fees are enforced
- Multiple years so that residents and commercial landscapers could transition to new equipment
- Banning the sale of equipment that produces higher dBA
- The sound decibel that is produced by certain equipment is accessible



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Banning Leaf Blowers

Prohibiting the sale of gasoline leaf-blowers by a certain year:

Seen in Washington DC:

- [The use and sale of gas-powered leaf blowers will be banned started in Jan. 2022](#)
- Individuals or companies using leaf blowers can be subject to fines
- Incentives the switch to electric by providing subsidies for contractors and households
- DC council voted on ban in 2018
- Department of Consumer Regulatory Affairs enforces fees for violations



Necessary steps for this for this to be successful

How to make this possible:

- Department to ensure violations fees are enforced
- Multiple years so that residents and commercial landscapers could transition to new equipment
- What qualifies as subsidized equipment is formed based on industry experts and is public knowledge



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Banning All Gas Lawn Equipment

Prohibiting the sale of gasoline equipment by a certain year:

Seen in California:

- Banning the sale of new gas-powered leaf blowers and lawn mowers starting in 2024.
- Regulations are declared by California's Air Resource Board
- All newly sold equipment must have zero-emission

Seen in Minnesota:

- **Bill HF 1715:** Introduced in the House on Feb. 13th
 - All Minnesota "Lawn and Garden Equipment" must be powered by electricity by Jan. 2025.
 - Would make Minnesota the second state to do this after CA.



Necessary steps for this for this to be successful

How to make this possible:

- Formation of a department to determine whether targets are being reached on production of electric equipment
- If production of electric equipment does not reach threshold, the target date of ban will be pushed back.
- Prioritizing increasing production of electric equipment to even price gap
- Upright cost of transition must be offset by money saved in fuel and repairs of gas equipment



Next Steps

- Need for more concrete, local, and accurate data to best reflect the motivations for a potential ban
 - Potential research being conducted with Macalester
 - Increase awareness on the negative effects of gas-powered equipment to incentivize buying electric
- Technology needs to increase in electric equipment to meet the productivity of gas-powered equipment
 - Help even the price gap

Questions



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