

Warrant Article 23
Capital Subcommittee Report
May 8, 2019

The Capital Subcommittee **held a hearing on April 4, 2019** on Warrant Article 23: **A resolution calling for the electrification of the Town's motorized fleet. It reconvened on April 30, at 5:15, in room 103 of Town Hall to discuss and review amendments.** In attendance at April 4th meeting were Harry Friedman, Pam Lodish, John VanScoyoc, Carla Benka - AC members; Justin Casanova-Davis – Assistant Town Administrator; David Geanakakis – Chief Procurement Officer; Zoe Lynn - Town Sustainability Planner; Jesse Gray, David Lescohier, Janice Kahn, Kathleen Scanlon, C. Scott Ananian, Jules Milner-Brage - Town Meeting members; and the following members of the public – Karyn Wergland, John Schachter, John Mannix, Wendy Murphy, Deane Coady, Diane Sokal, Elizabeth Rourke. In attendance at the April 30th meeting were: Carla Benka, Harry Friedman, Amy Hummel, John VanScoyoc and Pam Lodish plus Jesse Gray, Justin Casanova-Davis, Zoe Lynn, Dave Geanakakis and several members of the public.

Warrant Article 23 as initially presented

ARTICLE 23 Submitted by: Jesse M. Gray, TMM10, and Heather Hamilton, Select Board.

To see if the Town will adopt the following resolution:

RESOLUTION CALLING FOR THE ELECTRIFICATION OF THE TOWN'S MOTORIZED FLEET

Whereas, Brookline has a strong desire to assist the rest of the world in stopping climate change; and

Whereas, the Town must dramatically reduce its emissions via implementation of "strong and immediate" policies if it wishes to assist in keeping global warming below 1.5°C, per the December 2018 Intergovernmental Panel on Climate Change report; and

Whereas, fossil fuels for the Town's own motorized vehicles are a significant source of atmospheric carbon emissions, and all Town vehicles burn fossil fuels (although many sedans are hybrids); and

Whereas, a variety of all-electric vehicles (and sources of 100% clean electricity) are now available, with more becoming available every year;

NOW THEREFORE, BE IT RESOLVED that the Town Meeting calls upon the Town to fully electrify the Town's motorized vehicle fleet.

BE IT FURTHER RESOLVED THAT the Town Meeting calls upon the Town, as of July 1, 2019 or using funds allocated in the budget for FY2020 and fiscal years thereafter, to no longer acquire via purchase, lease, or otherwise, fossil fuel-consuming vehicles, including cars, trucks, buses, emergency vehicles, street sweepers, lawn mowers, snow blowers, skid-steers, or any other motorized portable equipment for which a practical alternative is already acquirable or can reasonably be expected to become acquirable within the needed time frame via purchase or lease. For purposes of this resolution, a practical alternative shall be defined as one or more non-motorized or electrified device(s) that singly or in combination can reasonably be expected to (1) meet the required needs with equivalent utility for the intended use (as determined by the department head requesting the vehicle) once an appropriate charger (or outlet) is installed, and (2) cost no more than 25% greater, in their initial purchase or total lease price, than an otherwise suitable fossil fuel-consuming vehicle, inclusive of obtainable federal, state, and vendor purchase or lease incentives but exclusive of one-time costs of installing infrastructure and equipment needed to provide electrical power for charging or operation. A fossil fuel-consuming vehicle, when electrified post-market (but prior to use), shall be considered as a potential practical alternative with total purchase cost equal to the sum of the initial purchase cost and post-market electrification cost.

BE IT FURTHER RESOLVED THAT when a higher ranked practical alternative on the following list is obtainable, the Town Meeting calls upon the Town to choose that higher ranked item over lower ranked ones, in the following order:

- 1. Fully electric equipment (e.g., Battery Electric Vehicles [BEVs])*
- 2. Partially electric plug-in hybrid equipment (e.g., Plug-in Hybrid EVs [PHEVs])*
- 3. Partially electric non-plug-in hybrid equipment (e.g., conventional hybrids).*

BE IT FURTHER RESOLVED THAT the Town Meeting requests the Town to note the energy source(s) of vehicles and powered devices in budget requests (e.g., fossil fuel, plug-in hybrid, non-plug-in hybrid, or fully electric).

BE IT FURTHER RESOLVED THAT although much of the Town's school bus and school van transport is currently provided by contract, such that vehicles are not owned or leased by the Town, the Town Meeting nevertheless encourages the Town and Schools to explore electrification of the contracted fleet and, as soon as is practical, to transition the contracted fleet to fully electric vehicles, by modifying or switching the contract and/or by acquiring some or all of the Town's own fleet via purchase or lease.

Background

The resolution calls upon the Town to fully electrify the Town's vehicle fleet by imposition of a moratorium on the purchase of new fossil fuel-consuming vehicles in instances where a practical and affordable electrified alternative is obtainable. The petitioner explained that the resolution is immediately relevant for many of the

Town's passenger cars, such as inspector cars, which can now be fully electrified practically and affordably as defined by the resolution. Full electrification may not be immediately practical or affordable for many other vehicles including garbage trucks, patrol cars, and SUVs, for which fully *Electric Vehicle (EV)* alternatives may not yet be available, practical, or cost-competitive.

The electrification of transport accounts for 25 percent of the Town's carbon emissions. With the Warrant Article, the petitioners goal is to reduce the Town's own carbon emissions by starting to electrify the Town's fleet of more than 300 vehicles. At the hearing, the petitioner pointed out that an electric car purchased today and powered by the Town's existing municipal electrical power reduces total carbon emissions by 60%-70% compared to an efficient hybrid car. As the grid gets cleaner by at least 2% per year through 2029 and 1% per year thereafter, and as Brookline potentially also buys even cleaner municipal power, (as advocated in Article 24) that same electric car could eventually drive its first mile without any additional carbon emissions beyond those required for manufacturing.

While electrifying the fleet is framed as a climate necessity, the petitioner's acknowledged that there is no perfect path forward due to costs and the limited types of electric vehicles currently on the market. If there are significant budget constraints due to costs of some larger, more specialized equipment, electrification could be slowed to save money, or it could be accelerated with additional funding.

The petitioner told the Subcommittee that Newton has been taking advantage of the Mass EVIP (Electric Vehicle Incentive Program) program (\$7,500 discount on each EV) to buy 25 electric vehicles and has plans to electrify its entire passenger car fleet of 42 vehicles.

Budgetary impact

The petitioner's contend that transitioning the Town fleet to all electric vehicles (EVs) should be roughly budget-neutral, with potentially higher costs in the near term and lower ones in the longer term. There may possibly be higher short-term costs in the first few years due to charger installation and higher purchase prices of (some) EVs. There may also be lower costs in the medium to long-term due to savings on maintenance. Whether the Town will save on fuel costs depends on a number of variables, including the model of vehicle being replaced; the price the Town pays for gasoline; and the cost of municipal power.

Currently it costs slightly more to 'fuel' an electric car than a Toyota Prius hybrid but less to fuel a hybrid cargo van than a standard one. Since the Town has some flexibility in deciding when to replace fleet vehicles, it could slow the vehicle replacement rate with a goal of maintaining budget neutrality. Alternatively, it could choose instead to accelerate replacement to achieve economies of scale and maximize capture of state incentives.

Maintenance costs EVs have very few moving parts. They can be driven for tens or hundreds of thousands of miles with nothing other than air filter replacements, fluid replacements, tire rotations, tire alignments, and tire replacements. EV brakes last longer because of powerful regenerative braking, which uses the motor to slow the vehicle and charge the battery. Electric motors require no maintenance, and at a cost of about \$1,000, they are less expensive than a catalytic converter. The costs of training DPW mechanics are unknown at this time but thought to be small.

Charger installation costs In a fleet transition to electric, the Town will incur a one-time per parking spot cost for installing chargers. The Town has experience in charger installation, having installed chargers in public Town lots and having plans to install chargers on Beacon St. It is hard to estimate charger installation costs without a quote from an electrician for a specific project, but a reasonable range for Town Hall upper garage is \$2,500 to \$5,000 per electrified parking spot, inclusive of Mass EVIP incentives of \$2,500 (per vehicle, for charger hardware only). To enable EVs to be purchased and used while awaiting charger installation, vehicles could on a temporary basis (weeks to months) potentially be charged overnight in Town public lots, charged overnight at other Town-owned locations at which charger installation may be more expedient, fast-charged at existing publicly available fast chargers, or charged overnight from a conventional outlet.

Just as there are less expensive and more expensive EVs, there are also less expensive and more expensive charging solutions. The least expensive charging solution, in the near term, would be to add standard outlets to the upper parking garage under Town Hall. A new Nissan Leaf plus a standard outlet installation is likely to be less expensive than buying a new Prius.

Q: What if the Town ends up not being able to capture federal or state incentives.

The 25% price premium built into this resolution is intended to protect the financial interest of the Town. It will function as a safety mechanism that kicks in when the cost to purchase an EV begins to outweigh the potential maintenance savings. If an incentive turns out to be (or becomes) inaccessible, rendering the cost of suitable EVs greater than 125% of that of a fossil fuel-consuming option, the Town would be able, even under the proposed policy, to purchase fossil fuel-consuming vehicles.

Q: What if maintenance savings aren't realized, and/or the cost of battery replacement makes maintenance savings a wash?

There is risk with the status quo, as well as with electrification. The risk with the status quo is that the Town could miss out on much lower maintenance costs of EVs. This status quo risk may be a greater risk than the electrification risk.

Q: Police vehicles operate 24/7 and follow Michigan State Police standards. Would this result in a need to increase the fleet and/or not be practical?

This resolution would leave the decision of whether an Electric Vehicle (EV) is a *practical alternative* to the appropriate department head, in this case the Police Chief. If the Chief were to determine that obtainable Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs), and non-plug-in hybrids were not practical, then under the proposed policy the department would be free to purchase non-EVs. If the Chief were to deem non-plug-in hybrids practical but BEVs/PHEVs not practical, the Town would be compelled, if operating under the suggested policy, to purchase the hybrids, assuming they added no more than 25% to the purchase price.

In an email from the Deputy Town Administrator to the petitioner, comments on and suggestions for Article 23 were offered, a number of which were incorporated into the Petitioner's final version of the Article.

Discussion

The Subcommittee generally supported the concept of an electric fleet. The language in the article providing for "Practical alternative" when necessary addressed the subcommittee's concerns that, until more widely available and affordable, the Town was not resolving to purchase electric fire apparatus and other large vehicles for which there are few if any, practical, electric alternatives.

Moreover, because Warrant Article 23 is a resolution, if passed, the Town has flexibility as it implements a move to an all-electric fleet. The Subcommittee was assured that the costs associated with implementation would be monitored and, cost-effective adjustments considered.

The subcommittee acknowledged that this plan to purchase "all" electric vehicles is in stark contrast to the Town's prior, incremental approach in transitioning to hybrid vehicles; however, Town staff (Zoe Lynn, Sustainability Program Administrator; Dave Geanakakis, Chief Procurement Officer; Justin Casanova-Davis, Assistant Town Administrator) expressed their support for the resolution and expressed confidence they could help implement this transition to an all electric fleet given time and discretion to make prudent choices.

The Subcommittee's sole recommendation was to change July 1, 2019 to July 1, 2020 and to change FY2020 to FY 2021 in the second "Resolve" clause. All present agreed that the change of dates would lead to a more realistic timeline.

At the April 4th meeting, the Subcommittee by a vote of 4 – 0 – 0 supported Article 23, with the following amendment in the second "Resolve" clause:

*BE IT FURTHER RESOLVED THAT the Town Meeting calls upon the Town, as of July 1, ~~2019~~ **2020** or using funds allocated in the budget for FY ~~2020~~ **2021** and fiscal years thereafter, to no longer acquire via purchase, lease, or otherwise, fossil fuel-consuming vehicles, including cars, trucks, buses, emergency vehicles, street sweepers, lawn*

mowers, snow blowers, skid-steers, or any other motorized portable equipment for which a practical alternative is already acquirable or can reasonably be expected to become acquirable within the needed time frame via purchase or lease. For purposes of this resolution, a practical alternative shall be defined as one or more non-motorized or electrified device(s) that singly or in combination can reasonably be expected to (1) meet the required needs with equivalent utility for the intended use (as determined by the department head requesting the vehicle) once an appropriate charger (or outlet) is installed, and (2) cost no more than 25% greater, in their initial purchase or total lease price, than an otherwise suitable fossil fuel-consuming vehicle, inclusive of obtainable federal, state, and vendor purchase or lease incentives but exclusive of one-time costs of installing infrastructure and equipment needed to provide electrical power for charging or operation. A fossil fuel-consuming vehicle, when electrified post-market (but prior to use), shall be considered as a potential practical alternative with total purchase cost equal to the sum of the initial purchase cost and post-market electrification cost.

Capital Subcommittee April 30th Meeting

The subcommittee reconvened on April 30th to review changes the petitioners made after productive meetings with Town Staff.

The primary changes included in the petitioners' amended version removed the 25% price point trigger. While they retained a broad EV policy, the Town staff envisions delivering tailored EV policies for police, fire vehicles in the next year.

The Subcommittee heard from several members of the public who spoke in support of the Warrant Article, and the Town's general support for policies that help mitigate climate change. Again, the Subcommittee was supportive of the article, but suggested additional wording changes in the interest of clarity. After providing some guidance, the committee voted 5 – 0 to continue the hearing until May 7th when it will review the final language.

Below is the petitioner's amended version of Warrant Article 23, submitted by: Jesse M. Gray, TMM10, Heather Hamilton, TMM3 and received on **May 3** (Jesse Gray reports that it has been agreed upon by Town staff as well as the co-sponsors.)

To see if the Town will adopt the following resolution:

RESOLUTION CALLING FOR THE ELECTRIFICATION OF THE TOWN'S MOTORIZED FLEET

Whereas, Brookline has a strong desire to assist the rest of the world in stopping climate change; and

Whereas, the Town must dramatically reduce its emissions via implementation of "strong and immediate" policies if it wishes to assist in keeping global warming below 1.5°C, per the December 2018 Intergovernmental Panel on Climate Change report; and

Whereas, fossil fuels for the Town's own motorized vehicles are a significant source of atmospheric carbon emissions, and all Town vehicles burn fossil fuels (although many sedans are hybrids); and

Whereas, a variety of all-electric vehicles (and sources of 100% clean electricity) are now available, with more becoming available every year; and

Whereas the Town and its fleet are an important and visible model to the public, shaping culture and belief in collective climate action; and

Whereas transportation and transportation-related emissions are primarily a function of (1) vehicle energy efficiency; (2) the carbon emissions associated with vehicle energy use; (3) vehicle miles traveled; and (4) other factors related to vehicle use, *e.g.*, vehicle size and demand for vehicles, which may be influenced by encouraging the use of route optimization, virtual meetings, and alternative modes of transport such as biking, scooters, walking, and MBTA;

NOW THEREFORE, BE IT RESOLVED that the Town Meeting calls upon the Town to electrify the Town's motorized vehicle fleet and to create a comprehensive vehicle policy to reduce greenhouse gas (GHG) emissions from motorized vehicles and equipment to zero by 2050, or as soon as is possible.

BE IT FURTHER RESOLVED THAT Town Meeting calls upon the Town, as of July 1, 2020, or using funds allocated in the budget for FY2021 and fiscal years thereafter, not to acquire via purchase, lease, or otherwise fossil fuel-consuming vehicles including cars, trucks, buses, emergency vehicles, street sweepers, lawn mowers, snow blowers, skid-steers, or any other motorized portable equipment for which a PRACTICAL ALTERNATIVE is acquirable via a contract or procurement process that complies with MGL Ch. 30B. For the purposes of this resolution, a PRACTICAL ALTERNATIVE shall be defined as one or more commercially available electrified device(s) that singly or in combination meet the required needs with equivalent utility for the intended use. The department head requesting the vehicle, after consultation with the Chief Procurement Officer and Fleet Manager, will determine whether available alternatives qualify as PRACTICAL ALTERNATIVES.

BE IT FURTHER RESOLVED THAT Town Meeting calls upon the Town to create a policy to prioritize higher ranked PRACTICAL ALTERNATIVES over lower ranked ones, in the following order:

1. Fully electric equipment (e.g., Battery Electric Vehicles [BEVs]);
2. Partially electric plug-in hybrid equipment (e.g., Plug-in Hybrid EVs [PHEVs]);
3. Partially electric non-plug-in hybrid equipment (e.g., conventional hybrids).

BE IT FURTHER RESOLVED THAT Town Meeting calls upon the Town Administrator to amend the vehicle policy within the next year to integrate fleet management and purchasing practices that advance zero-emission vehicles, fleet rightsizing, route optimization, reductions in vehicle miles traveled, and other relevant considerations that are needed for a stable climate, environmental stewardship, equity, sustainable budgets, and community health.

BE IT FURTHER RESOLVED THAT Town Meeting requests Town Departments to note the energy source(s) of vehicles in budget requests (e.g., fossil fuel, plug-in hybrid, non-plug-in hybrid, or fully electric).

BE IT FURTHER RESOLVED THAT for the purchase of Public Safety vehicles, the following standards must continue to be complied with, as set forth in the following:

- A. For Police Department vehicles, acceptable Michigan State Police vehicle test results for the current model year police vehicles, and;
- B. For Fire Department vehicles, the NFPA 1901 Standard for Automotive Fire Apparatus; the NFPA 1911 Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles; the NFPA 1914 Standard for Fire Apparatus Refurbishing; and the NFPA 1915 Standard for Fire Apparatus Preventive Maintenance Program.

BE IT FURTHER RESOLVED THAT although much of the Town's school bus and school van transport is currently provided by contract, such that vehicles are not owned or leased by the Town, the Town Meeting nevertheless encourages the Town and Schools to explore electrification of the contracted fleet and, as soon as is practical and cost effective, to transition the contracted fleet to fully electric vehicles, by modifying or switching the contract and/or by acquiring some or all of the Town's own fleet via purchase or lease.

Or act on anything relative thereto.