

## Advisory Committee Capital Subcommittee Report on Article 24 for May 2019 Annual Town Meeting

The Advisory Committee Capital Subcommittee held a public hearing on Article 24 on 4/04/2019. Attendance is given at the conclusion of this report.

ARTICLE 24 is Submitted by: David Lescohier TMM 11. It follows through on the goals of the Brookline Climate Action Plan (CAP). The CAP endorses six strategies for reducing climate-changing greenhouse emissions (mitigation) and preparing for climate-change impacts (adaptation).

The goal of the Brookline CAP is to achieve, by 2050, zero greenhouse emissions (no reliance on fossil fuels) Town- and community-wide.

The case for achieving zero greenhouse emissions by 2050 as a counter to the devastating impacts of climate change is documented in the Paris Climate Agreement ( [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf) ).

The intent behind Article 24 is to move the Town beyond its current trajectory of achieving 60% of energy supply from Green/Renewable Sources by 2050. The 60% benchmark will be reached without further action by the Town due to current state laws requiring 2% annual increases in renewable-sourced electricity for retail sale through 2029, followed by 1% increases 2030-2050.

To achieve 100% of energy supply from Green/Renewable Sources by 2050 will require the Town to step up its purchases of Renewable Energy Certificates (REC) from the Town's current energy supplier. Energy suppliers receive one Renewable Energy Certificate (REC) for each megawatt hour (MWh) of electricity sourced. The Town's current energy supplier is capable of meeting demand for purchase of additional RECs from the Town of Brookline.

The budgetary impact of purchasing additional RECs annually over FY 2021 - 2050 will be additional yearly increases of approximately \$40,000.

The Warrant article calls upon the Select Board to adopt a policy in the Town of Brookline Financial Plan to request that the Advisory Committee recommend to Town Meeting year-by-year increases in appropriations for the additional REC purchases.

The directed appropriations to achieve 100% fossil fuel-free energy by 2050 are compared by the sponsor of Article 24 to the town's program of reducing to town's unfunded OPEB liability through increased annual payments. In the words of the sponsor, "The conversion to green energy is another long-term obligation, which, if it the Town doesn't take steps to begin addressing now, will have growing negative consequences deeply."

Town Hall staff (see attendance) spoke in favor of Article 24, saying that the goal of 100% zero emission energy sourcing is achievable by 2050 but will come at a cost.

TMM C. Scott Ananian spoke in favor as did members of the group Mothers Out Front (see attendance).

The Subcommittee Vote to Recommend Favorable Action on Article 24 was 4-0.

ATTENDANCE: 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.

-- SUBMITTED BY JOHN VANSCOYOC

## Article 23

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. In attendance 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 Leschier, 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.

### Summary

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

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.*

By a vote of 4-0-0, the Capital Subcommittee recommends Favorable Action on the Article, as amended.

#### Discussion

The petitioner is to be commended for his very thorough presentation and Warrant Article Explanation. The information, which he provided to the Capital Subcommittee, requires very little – if any – elaboration.

The Subcommittee's sole recommendation is 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.

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 petitioner is looking for the Town to directly reduce its own carbon emissions by starting to electrify the Town's fleet of more than 300 vehicles. The electrification of transport accounts for 25 percent of the Town's carbon emissions. 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 a climate necessity, there is no perfect way to proceed. If it turns out that this particular electrification strategy ends up delaying vehicle purchases due to budget constraints that delay by modifying the electrification strategy. 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 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. He believes that a Brookline fleet electrification policy that is ambitious, clear and practical could inspire residents and staff to buy their own EVs.

Budgetary impact: Transitioning the Town fleet to 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.

Subcommittee's Comments: This is a program that's worth trying. The safety net of "Practical alternative" gives a sufficient level of comfort that the Town won't be backed into having to look for electric fire trucks. Furthermore, it's a resolution, consequently if some tweaking is necessary after implementation starts, we won't be tied up in bureaucratic knots trying to amend it. The subcommittee acknowledged that it's a different approach from the far more incremental one from years ago of purchasing a few hybrid vehicles at a time for the "fleet" but the subcommittee has confidence in the feedback from the three Town Hall staff members attending the hearing, all of who indicated that they thought the resolution was reasonable. It is assumed that costs of implementation and other expenditures will be monitored and since the article does not lock the Town into any permanent commitments, cost-effective adjustments can be made as needed.

The subcommittee by a vote of 4 – 0 – 0 supports 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*

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