Decarbonizing the Peak (DTP) Focus Area Work Group (FAWG) Core Strategic Findings

Following a series of iterations and open discussion, the DTP FAWG collectively agreed to support the following eleven (11) findings, summarizing Phase I and II results to provide a foundation for future policy recommendations.

Finding 1. The reliability challenge is expected to shift from short-duration summer peaks (2030) to longer sustained morning and evening winter peaks by the 2040s, driven by heating electrification and periods of low renewable output. As net peak periods, defined as remaining demand after renewable output, become longer and more frequent by 2040, achieving complete decarbonization will require resources that can provide output during these high load/low renewable output periods. Examples of these resources are in the findings that follow.

Finding 2. Peaker plants are expected to continue to operate infrequently but remain critical for reliability until alternatives with equivalent capacity contributions can be deployed feasibly**,** safely, and cost-effectively at scale. Retiring them without equivalent replacement options would create reliability concerns and may shift emissions to remaining units across ISO-NE.

Finding 3. Targeted load management and demand response during net peak periods can play an important role in 2030 and is expected to remain valuable through 2050, though its effectiveness during longer winter net peak periods is uncertain, and may drive innovation in demand-side solutions. The DTP FAWG supports the recommendations from the DOER load management report as key to enabling peak demand reduction.

Finding 4. The current regulatory compensation framework and market structure for peak electricity resources, such as peaker plants, relies largely on payments through ISO New England wholesale markets, where revenues are driven by Forward Capacity Market payments for availability, supplemented by energy and ancillary service revenues during net peak periods. This structure supports resources that can reliably perform during net peak periods and other grid constrained periods. ISO-NE is currently engaged in a Capacity Auction Reform (CAR) process to ensure that all resources are valued based on their reliability contribution, including clean resources such as wind, solar, and demand response.

Finding 5. In the short-term (2030), technology and fuel options to reduce reliance on fossil fuel powered peaker plants include a range of short- and long-duration energy storage technologies, renewables, demand-side solutions, grid-enhancing technologies, and, potentially, alternative fuels that can be procured and operational within this timeframe. These resources should be evaluated through a technology-neutral lens to ensure the most cost-effective and lowest-impact solutions are prioritized. Views differ on the role of alternative fuels for use in power generation and associated greenhouse gas and local air quality impacts; however, there is agreement that any consideration of these resources should be contingent on establishing a clear and consistent greenhouse gas accounting framework and associated policies by the state.

Finding 6. In the mid-term (2040), increased deployment of renewable generation, particularly on-shore and off-shore wind that generates power during winter net peak periods, will need to be paired with additional storage capacity to support the grid's resource adequacy needs. Other

emerging technologies, such as alternative fuels, SMRs, and fusion energy, may also play a role if commercially available, cost competitive, safe, carbon neutral, and feasible at scale.

Finding 7. An analysis reviewed by the FAWG prepared by Synapse Energy Economics (Decarbonizing the Peak Report) for the Massachusetts Clean Peak Coalition, indicates that aggressive deployment of demand side measures, energy storage, solar, onshore and offshore wind generation, hydropower, and other clean energy options paired with firm, dispatchable clean resources and grid optimization could allow for complete decarbonization of the grid using all non-combustion resources by 2050. Views differ among FAWG members on the cost and feasibility of achieving complete decarbonization via this pathway by 2050.

Finding 8. Given the many services provided by institutional Combined Heat and Power (CHP) plants, decarbonization and eventual replacement will require a portfolio approach. Near-term actions focus on fuel retrofits and energy storage; medium-term strategies expand to electrification, thermal recovery or expanded geothermal, and DER participation; and long-term pathways center on district energy systems, integrated storage, and clean backup solutions to enable full retirement.

Finding 9. Community engagement and equity are essential elements of any policy and action addressing the energy transition, particularly to ensure that communities disproportionately burdened by existing energy infrastructure are not further exposed to cumulative health and environmental harms, that decarbonization efforts deliver tangible local health and environmental benefits, and that the state is supporting a just workforce transition.

Finding 10. The interconnection process currently poses a significant barrier to developing new resources that would displace or reduce reliance on peaker plants. Active collaboration with relevant entities, including ISO-NE, electric distribution companies (EDCs), and New England States Committee on Electricity (NESCOE), will be necessary to identify ways to reduce interconnection barriers and accelerate the deployment of new resources onto the grid.

Finding 11. Decarbonization pathways for specific peaker plant sites will depend on multiple general and site-specific factors, including the impact on the surrounding community and jobs, current fuel use and equipment, interconnection capacity, land availability, replacement technology maturity, site-specific grid opportunities, and financial considerations.