BACKGROUND AND RENEWABLE ENERGY BASELINE

Renewable Energy Goals

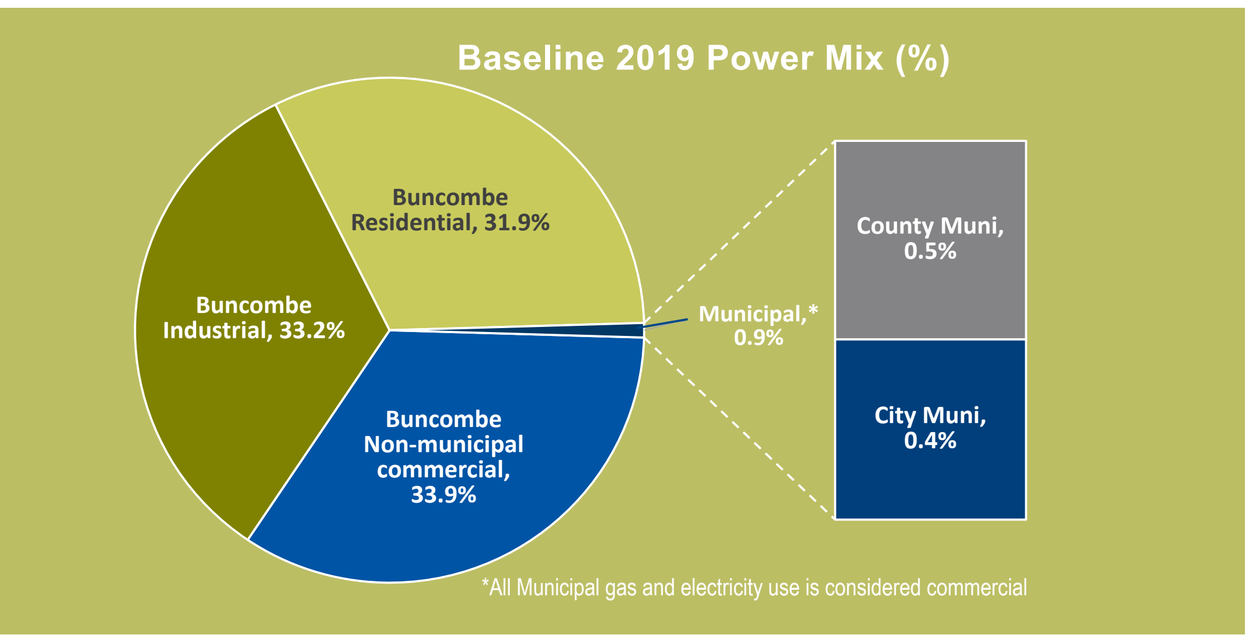
Buncombe County Targets

- Utilization of 100% renewable energy for county operations by 2030.
- Utilization of 100% renewable energy for the entire county by 2042.

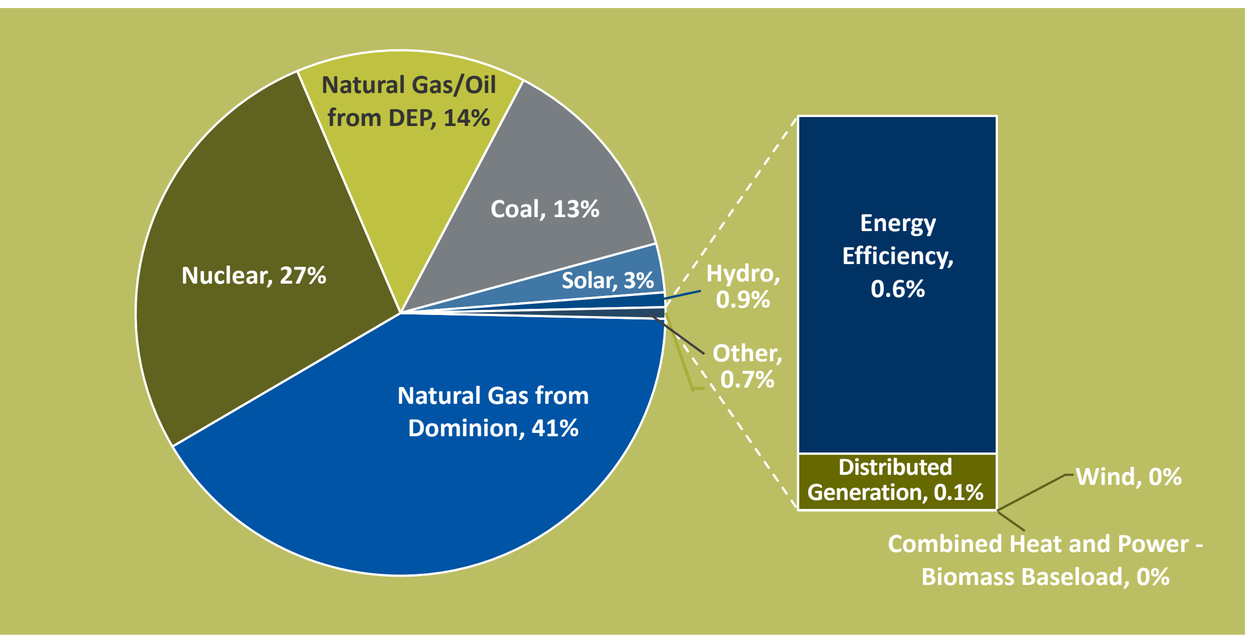
City of Asheville Targets

- Transition municipal operations from fossil fuel-based energy sources to renewable energy by December 31, 2030.
- Office of Sustainability to develop a renewable energy plan that supports the County's community-wide goal.

Energy Consumption by End-User



The Current Energy Mix

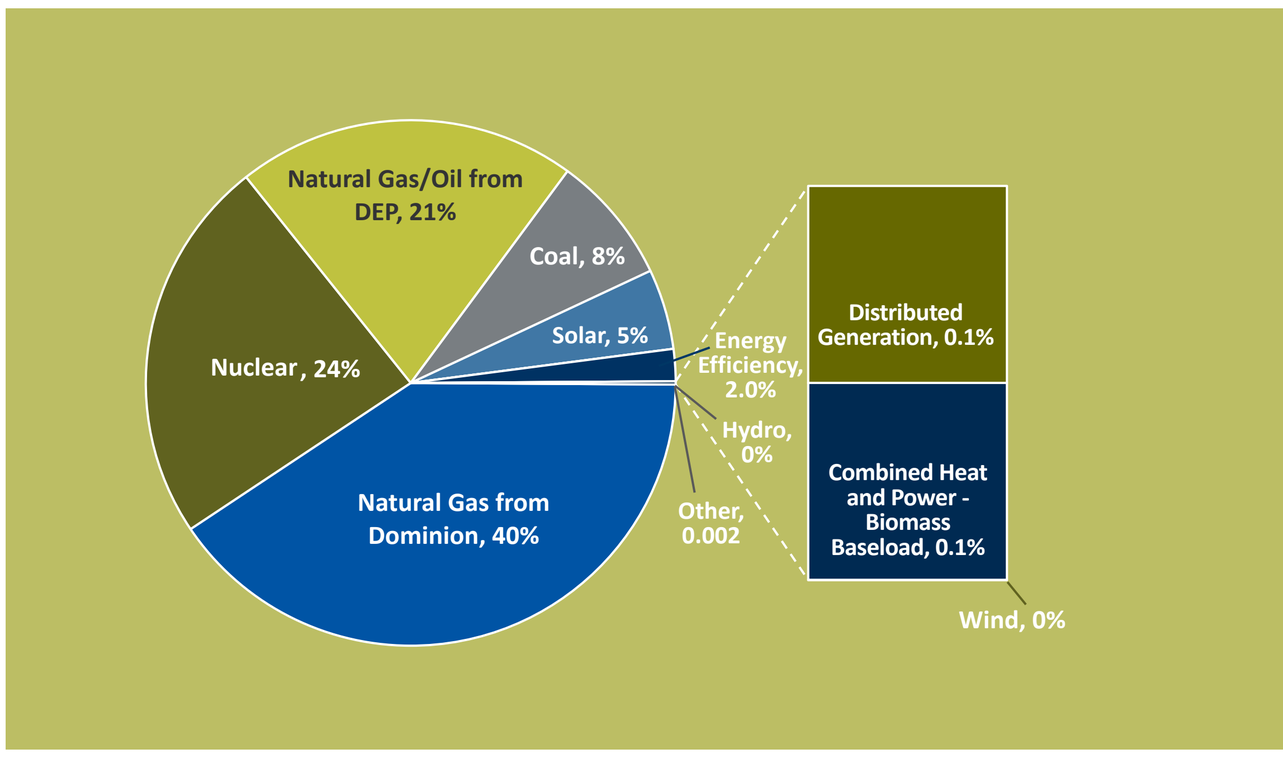


- The City government buildings consumed 15,841 MWhs of electricity in 2018 (60% of total), and 35,214 MMBtu of natural gas (40% of total).[1]
- The County government buildings consumed 17,006 MWhs of electricity in 2018 (59% of total) and 40,367 MMBtu of natural gas (41% of total).
- The community's buildings overall consumed an estimated 3,026,276 MWhs of electricity in 2018 (51% of total) and 10,013,532 MMBtu of natural gas (49% of total).
- Only 7.6% of electricity supply for buildings is renewable. Out of the overall energy-mix that includes natural gas from Dominion, only 4% is renewable.

The Future Energy Mix

Without further action it is expected that by 2030:[2]

- Only 8.1% of the electricity supply (or 5.2% of the overall power supply) will come from renewable energy sources.



Without further action it is expected that by 2042:[3]

- The County will fall short of the community-wide goal.

	DEP's Energy Output + Distributed Generation (%)				
	2019	2025	2030	2035	2042
% Renewable	**7.6%**	**8.5%**	**8.1%**	**7.9%**	**7.9%**
% Carbon-free (Includes Nuclear and EE)	**54.3%**	**52.2%**	**51.8%**	**52.1%**	**52.1%**

Expected changes at the utility:

Planned Retirements:

- Hydropower will be phased out by 99 % in 2030.
- Coal output will also decrease by 33 % by 2030.

Planned Additions:

- The majority of these retirements will be replaced by natural gas/oil, with a small amount being replaced by solar and energy efficiency.

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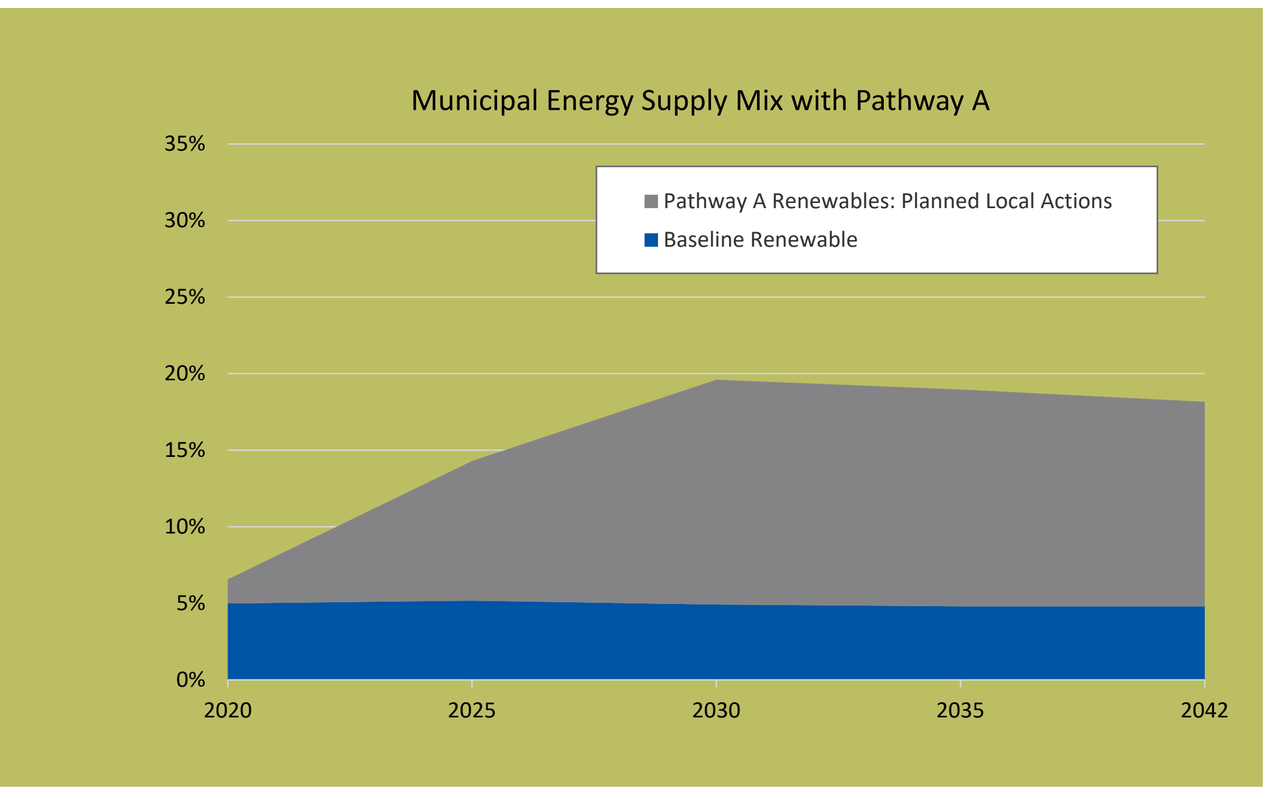
[1]*The City uses 1% less gas relative to its electricity use. This difference accounts for the 1% difference between the City's energy mix compared to the County-wide mix.*
[2]*This analysis takes into account planned additions, and retirements as outlined in Duke Energy Progress's Integrated Resource Plan.*
[3]*This analysis takes into account planned additions, and retirements as outlined in Duke Energy Progress's Integrated Resource Plan.*

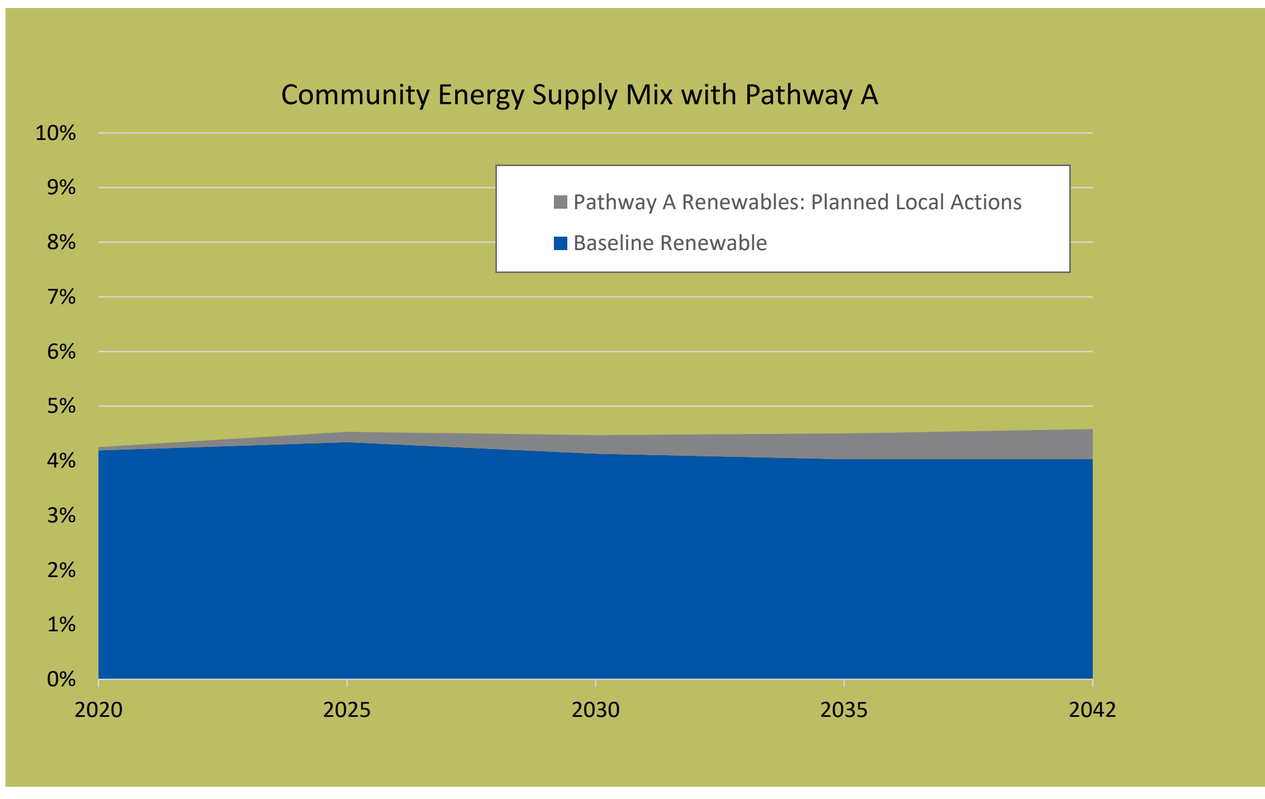
PATHWAY A: ACTIONS CURRENTLY PRIORITIZED BY THE CITY AND THE COUNTY

These actions are within the City or County's direct control, and are already in motion or at the City or County levels. These actions include:

Policies Under Pathway A	Relative Cost to the City and County to Implement (if each policy were implemented to 100% of its potential)[1]
City and County **directly install and own renewable energy systems** on government owned buildings and property;	$ $ $ $ $[3]
The City and County **implement streamlined permitting, zoning, and inspection** processes for renewable energy systems;	$
The City and County **lease land to the utility** for local renewable energy generation.	$
The City and County **continue investments in energy efficiency, renewable heating and cooling** technologies.[2]	N/A

Impact to the City and County Energy Mix:





**There is a 1% difference between the county municipal natural gas consumption and the city municipal gas consumption that is not reflected in this area chart.*

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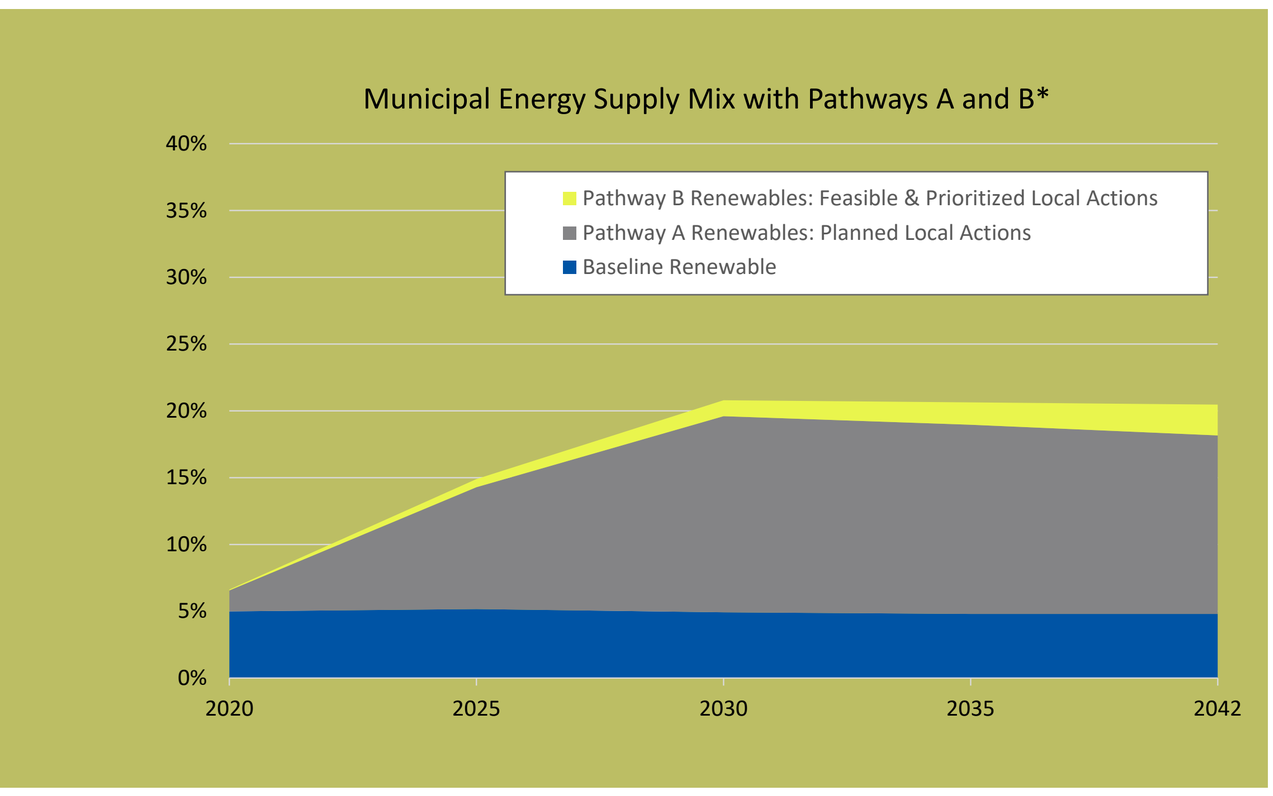
[1] *Costs include capital costs, and estimated labor time to implement to the City or County, and do not take into account cost savings or revenue.*
[2] *Investments in these technologies are expected to continue, but they were not included within the energy analysis.*
[3] *Scale of dollar signs is roughly representational.*

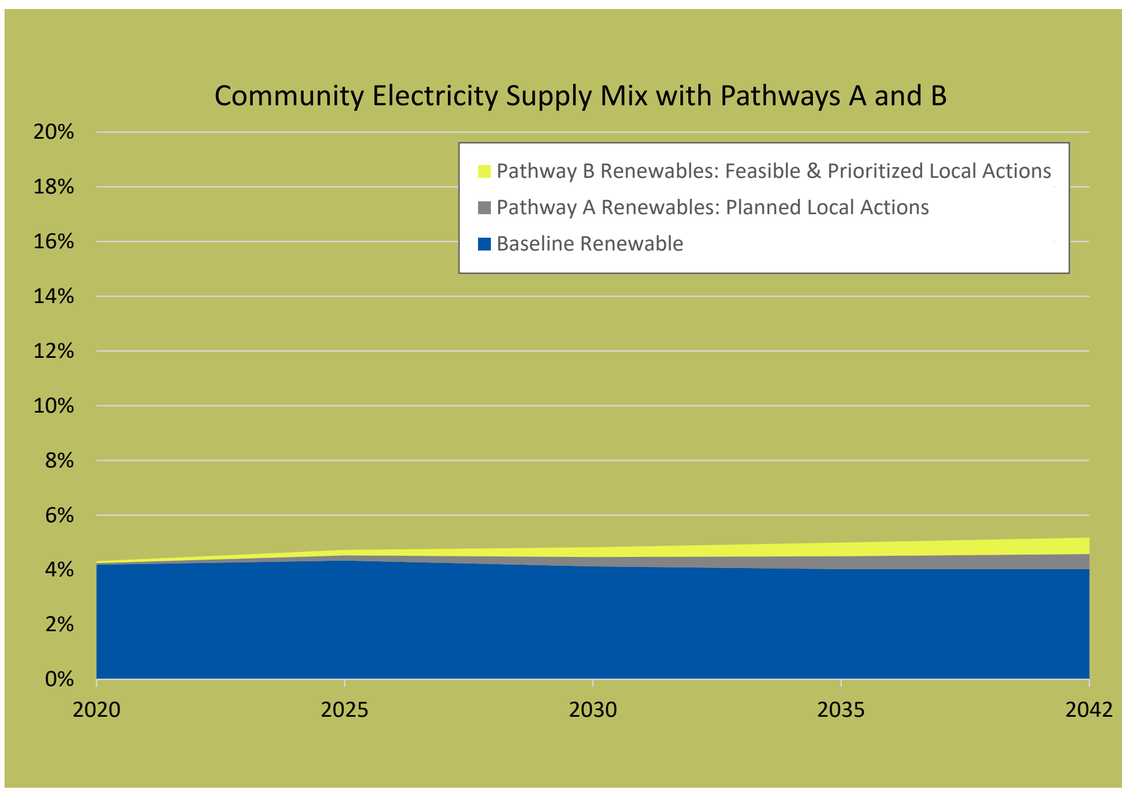
PATHWAY B: LOCAL ACTIONS IDENTIFIED AS FEASIBLE AND HIGH PRIORITY

These actions are highly local actions within the City or County's direct control or considered highly feasible. These actions include:

Policies Under Pathway B	Relative Annual Cost to the City and County to Implement (if each policy were implemented to 100% of its potential)[1]
City and County enter into s**olar leases for renewable energy projects** on government owned buildings and property;	$[2]
The City and County implement **internal policies requiring renewables to be installed during all new government construction and retrofit projects** as feasible;	$
The City and County run **community bulk purchasing campaigns** (e.g. Solarize Campaign);	$
The City and County **set up internal revolving loan funds for government projects**.	$

Impact to the City and County Energy Mix:





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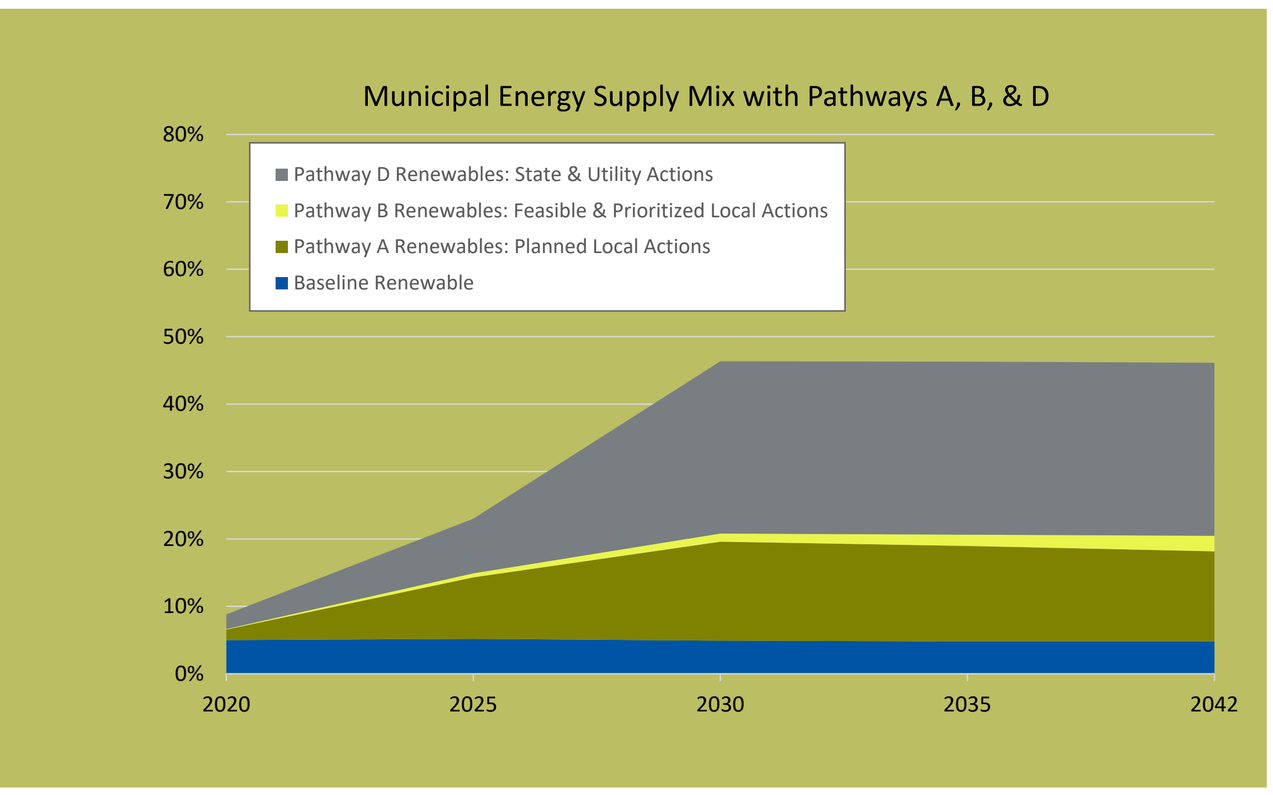
PATHWAY D: ACTIONS AT THE STATE AND UTILITY LEVELS:

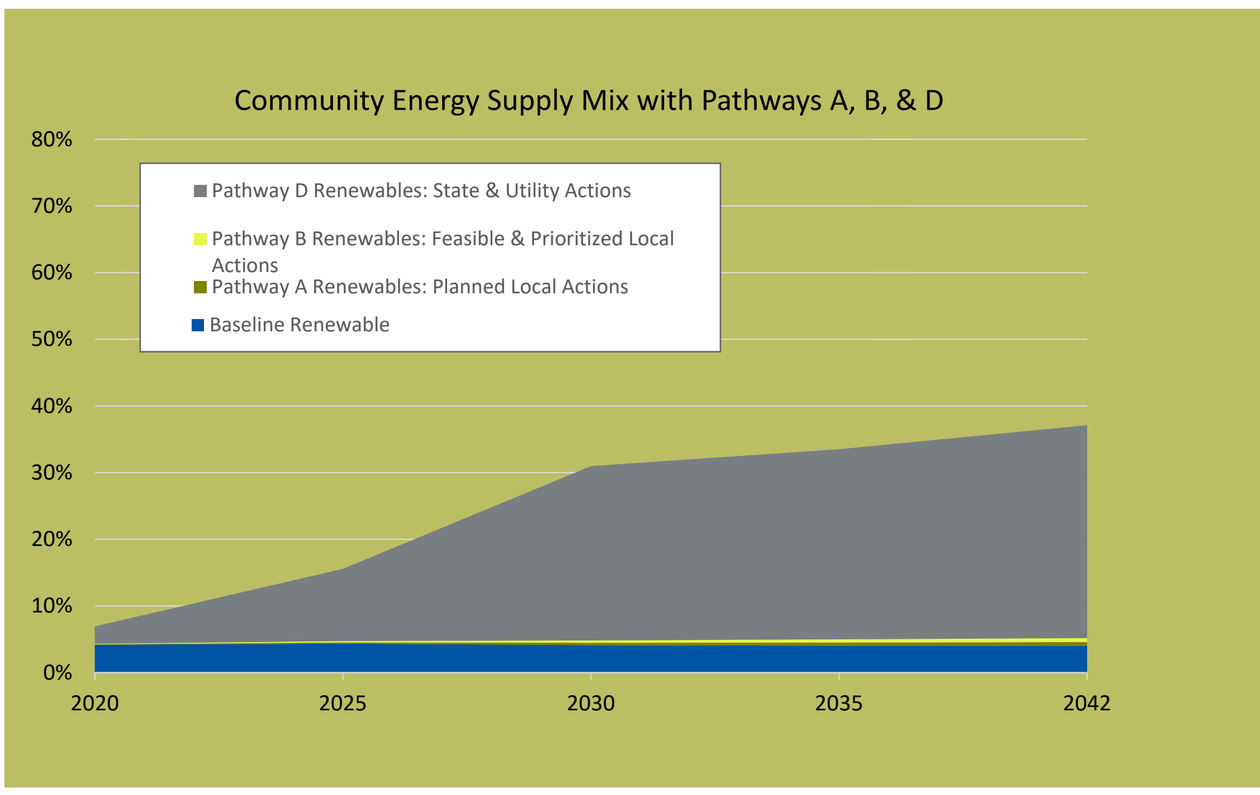
This pathway focuses on how actions at the State and Utility may impact the City and County's renewable energy goals. These actions are not within the City or County's direct control. These actions could include:

Policies Under Pathway D	Relative Annual Cost to the City and County to Implement (if each policy were implemented to 100% of its potential)[1]
A **statewide policy requiring renewable energy generation installation on new construction**;	$[2]
An **increase to North Carolina's Renewable Energy Portfolio Standard** (REPS);	$
State legislation **enabling third party ownership** (power purchase agreements) in North Carolina;	$
The founding of a **state Green Bank**;	$ $
The state passes legislation **allowing for community shared solar.**	$

Please note: As these policies are ones which the County and the City do not have direct control over, the cost to the local governments is based on potential staff time that might be needed to engage in conversations at the state and utility level on these key issues.

Impact to the City and County Energy Mix:





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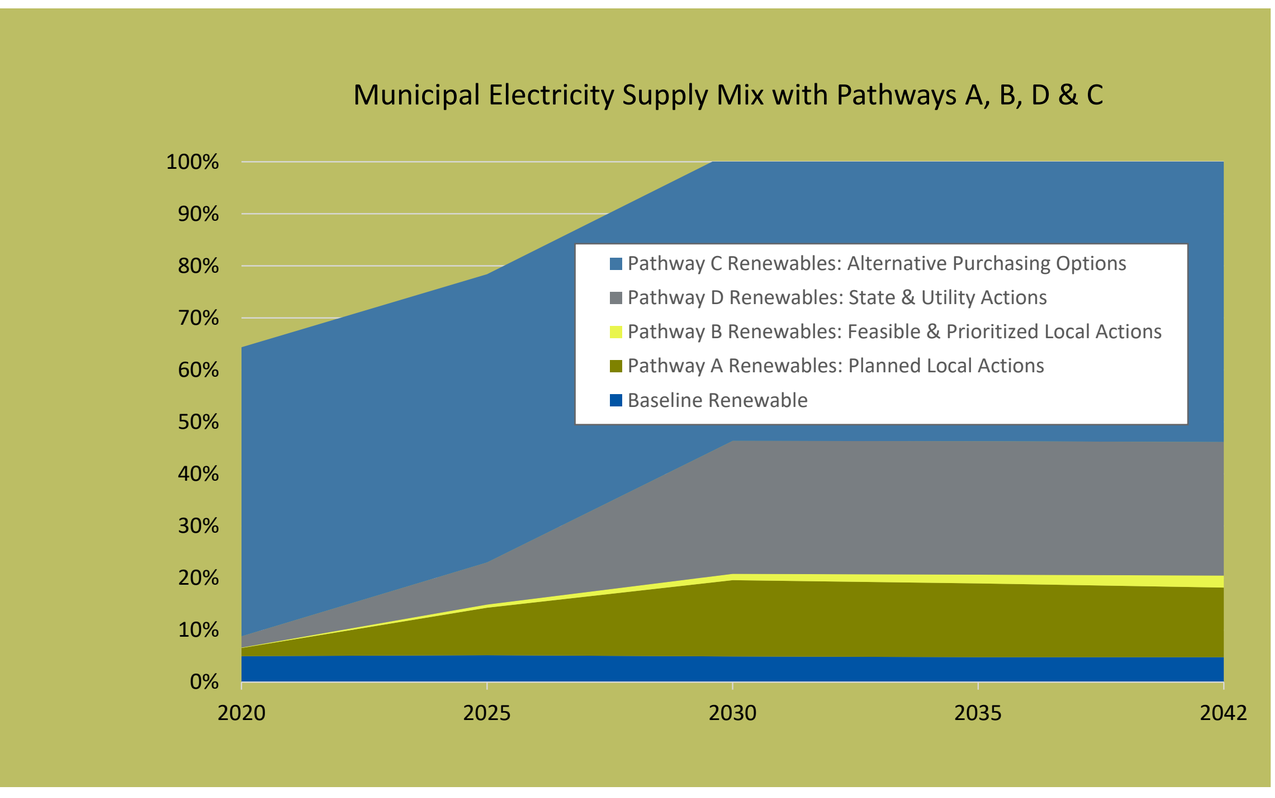
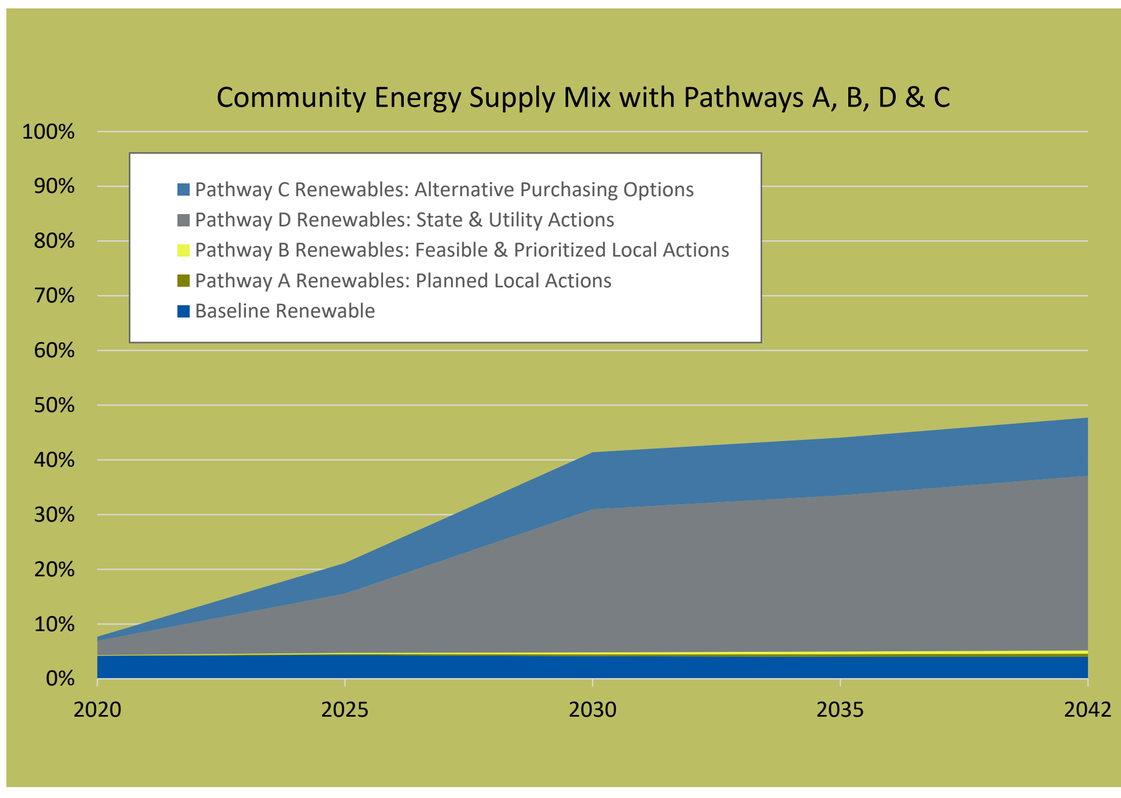
PATHWAY C: ALTERNATIVE PURCHASING OPTIONS

This pathway focuses on alternative ways for the City and County to purchase renewable energy. These actions include:

Policies Under Pathway C	Relative Annual Cost to the City and County to Implement (if each policy were implemented to 100% of its potential)[1]
City and County **purchase renewable energy certificates** (RECs)	$ $[4]
City and County enter into **power purchase agreements with utility**	$ $
Residents and businesses **purchase renewable energy certificates** (RECs)[2]	N/A
Residents and businesses **purchase renewable energy from utility**.[3]	N/A

Impact to the City and County Energy Mix:





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[1] *Costs include capital costs, and estimated labor time to implement to the City or County, and do not take into account cost savings or revenue.*
[2] *Costs for REC purchasing by residents and businesses were not included in this analysis.*
[3] *Costs for residents and businesses to purchase renewable energy from the utility were not included in this analysis.*
[4] *Scale of dollar signs is roughly representational.*

NORTH CAROLINA CONTEXT AND CHALLENGES

Challenges

- Buncombe County and the City of Asheville are served by **investor-owned utilities** which are regulated by the State. Thus, **many actions are beyond the direct control of the County and City**.
- Stakeholders noted a **preference for the renewable energy transition to come at a low cost**, ideally without new funding (increased taxes, issuing bonds) or pulling funding from other municipal programs and priorities.
- There is a **limited amount of land/property available for renewable energy development** in Buncombe County.

State Renewable Energy Policies

Permitted	Permitted, with caveats	Not in Place/Not Allowed
• Solar leasing • Local onsite distributed generation • REC purchasing • Bulk purchasing	• Community solar: facing delayed implementation • Renewable Energy and Efficiency Portfolio Standard, but 12.5% goal is already met by DEP • Net Energy Metering is allowed, but systems must be sized below 10 kW (residential) or 100 kW (commercial)	• Third party ownership (PPAs) • Wind Power (on and off-shore wind) • Statewide cap and trade program