From: Sarah Brody <Sarah_Brody@mckinsey.com>
Sent: Thursday, February 14, 2019 11:55 AM
To: Zahn, Aaron F. - Managing Director/CEO
Cc: Crawford, Juli E. - Director Financial Planning & Analysis; Blackshear, Victor L. - Manager Financial Planning & Rates; Schlossman, Scott N. - Financial Analyst Sr. Planning & Rates; Davis, Eric M. - Financial Analyst Senior Financial Planning & Rates; Wannemacher, Ryan F. - Chief Financial Officer; Aaron Bielenberg
Subject: Status quo SLT presentation and Board presentation for review

Aaron,

Please see attached for the proposed status quo presentation for the SLT tomorrow, with the plan being to review the first two sections in the room and leave the final section as supplemental material. Please let us know if you have any questions or comments – in particular, whether the major assumptions called out on page 14 are in line with your thinking. Happy to discuss if helpful.

We'd like to send to the SLT by end of day today, so they have some time to review before the meeting tomorrow.

In addition, we are sending a revised status quo Board presentation, based on our conversation Monday. When you have a chance to take a detailed read and think through the communications, we're happy to meet again for additional revisions.

Thanks,
Sarah

Sarah R. Brody, Ph.D
McKinsey & Company
Email: Sarah_Brody@mckinsey.com | Mobile: +1-202-247-1448

Status Quo Baseline – SLT assumptions final discussion

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Disclaimer

The following **"Status Quo Baseline"** financial projections are presented solely for JEA Board of Directors planning and action in connection with the development of a strategic plan. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are a mathematical representation of a status quo business case and do not reflect numerous likely future events and future JEA actions that will likely cause actual results to differ materially from this business case. The presentation should be viewed in its entirety with individual slides or sections of the presentation having no greater or reduced significance relative to other slides or sections of the presentation

Recap since last SLT meeting and goals for today

Jan 16: SLT meeting to present initial status quo results and assumptions

Jan 23 – Feb 7: working sessions to refine assumptions in 4 key areas: water sales, water capex, energy sales, energy capex

Today: **review and confirm support for all status quo baseline assumptions and outputs**

March 26: present status quo baseline at Board meeting

Assumptions

Energy Sales

Updated since previous SLT *(previous version)*

		Key metric	2019	2025	2030	Source / rationale
1 Customer growth		Population (thousands)	969	1,050	1,115	Moody's Duval county forecast
		GDP (Duval, Total, (Mil. Ch. 2009 USD))	55,930	70,030	80,635	Moody's Duval county forecast
		Median household income	57,204	76,609	93,258	Moody's Duval county forecast
2 Energy efficiency		Residential efficiency (kWh/customer)	12.5	11.5	11.3	Appliance-level adoption assumptions
		Commercial efficiency (kWh/customer)	77.5	69.6	68.8	Appliance-level adoption assumptions
		Industrial per-capita consumption (kWh/customer)		Constant		JEA customer forecast
3 Distributed generation (DG) (solar)	Cost	Residential solar cost ($/W)	$2.65	$1.41	$1.17	2018 solar cost forecast model
		Residential storage cost ($/W/system)	$0.42	$0.23	$0.19	2018 storage cost forecast model
		C&I solar cost ($/W)	$1.58	$1.12	$0.91	GTM solar cost projection
	Value	Retail electricity price (R) ($/kWh)	0.103	**0.110** *(.108)*	**0.126** *(.118)*	Baseline (current projection) assumptions
		Incentives in place	ITC through 2022, battery rebate through 2030			Current regulation
		Residential storage backup value ($/year)	$200	$200	$200	Internal estimate based on sales trends
		Self-consumption (w/o battery)[1]	65%	65%	65%	Solar output and household consumption curves
		Retail electricity price (C&I) - weighted solar ($/kWh)	**$0.07** *(new)*	**$0.08** *(new)*	**$0.09** *(new)*	Baseline (current projection) assumptions
	Adop-tion	Developer hurdle (% IRR)	9%	9%	9%	Appetite for commercial offtaker risk & new market
		Pre-parity adoption (residential, C&I)	**0.10%** *(new)*	**0.10%** *(new)*	**0.10%** *(new)*	High end of historic post-parity adoption trends
		Post-parity adoption (C&I developer economics)	**1.25%** *(new)*	**1.25%** *(new)*	**1.25%** *(new)*	High end of historic post-parity adoption trends
		Post-parity adoption (Resi customer economics)	1.00%	1.00%	1.00%	High end of historic post-parity adoption trends
		Post-parity adoption (Resi **developer** economics)	1.50%	1.50%	1.50%	High end of historic post-parity adoption trends
4 DG (non-solar)		Annual adoption (kW)	475	475	475	Consistent with national trends over past decade
		Economically viable for broad customer base		No		Consistent with national trends
5 Electric vehicles (EV)		Consumption per BEV (weighted, MWh)	3,850	3,208	2,750	Current efficiencies and estimate of improvements
		EVs in fleet (#)	1,968	12,635	30,751	2018 EV growth forecast model
		EV penetration (%)	0.30%	1.60%	3.60%	2018 EV growth forecast model, current JEA fleet

1 Assumes battery part of most installations by mid-2020s

Energy Costs

Updated since previous SLT
(previous version)

	Key metric	Assumptions	Source / rationale
6 O&M	O&M escalator (%)	Assuming a 2% escalator on O&M cost except for Outage Expenditures	Consistent with historic trends; **2019/2020 O&M estimates increased based on internal input**
Base rate	Base rate (inclusive of fuel) ($/kWh)	$.103 in 2019, **increasing to .126** *(.118)* **by 2030**	Baseline (current projection) assumptions, with February 2019 O&M updates
7 Capital costs	Average capital expense ($M)	**Average annual spend 2019-2025: $262M** ($255) **Average annual spend 2026-2030: $184M** ($175)	Based on Capital Budget Planning project list; future average excludes generation
	New capacity ($M)	**New capacity (Greenland combined cycle) ($532M spend 2021-2025)** ($518m 2020-2023)	Costs based on IRP base case assumptions
City contribution	Annual city contribution	Annual payment continues in line with current charter agreement through 2023 then zero thereafter	Based on existing charter agreement
Debt	New debt ($M)	Assumes STAR plan of early debt retirements of $413M (from 2019 – 2022). Greenland is debt financed in all scenarios	Based on stated STAR plan
Scenarios	Debt, city contribution, rates	Scenarios tested: ▪ Holding rates constant / raising rates to completely address cash gap ▪ Inclusion / exclusion of city contribution post 2023	Highlight tradeoffs and impact of decisions regarding rate and debt decisions in status quo projection scenario

Water Sales & Costs

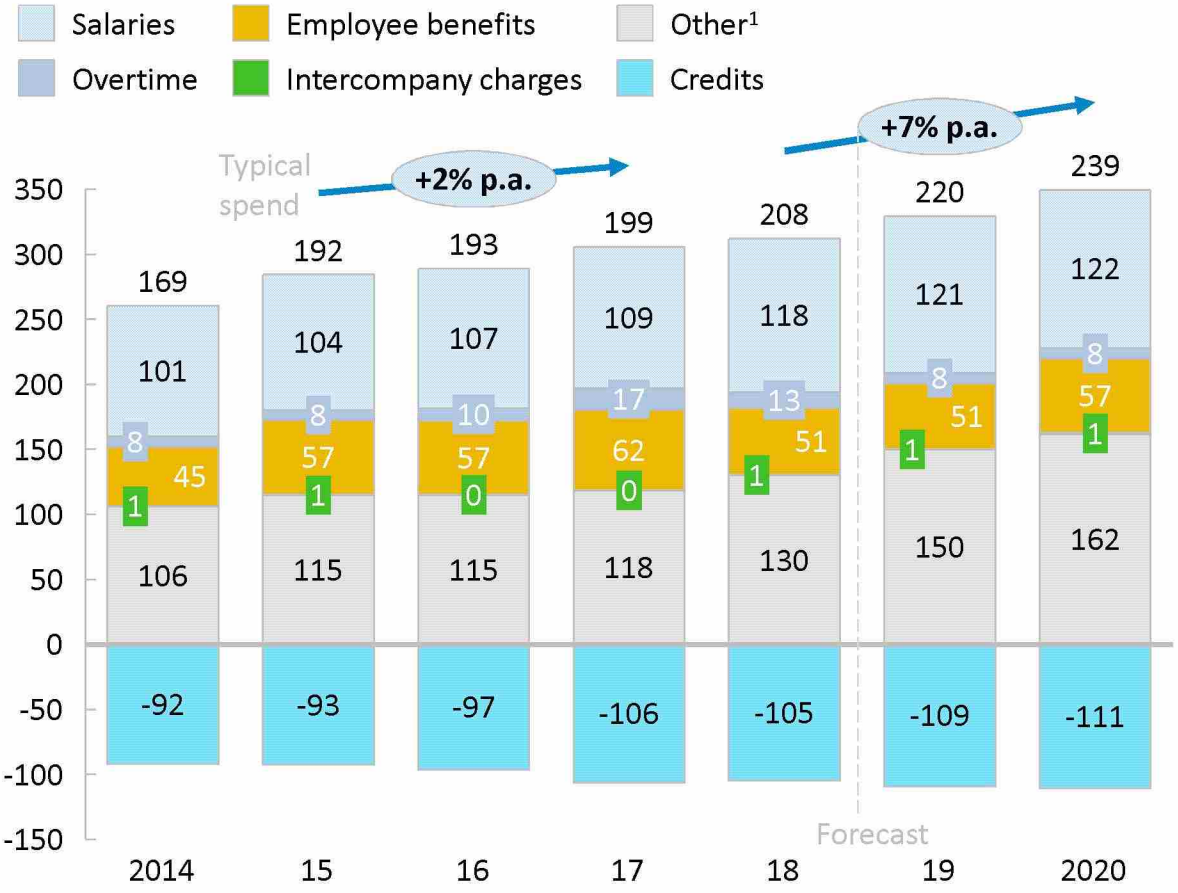
Updated since previous SLT
(previous version)

	Key metric	2019	2025	2030	Source / rationale
8 Customer growth	Customer growth	1.50%	1.50%	1.50%	SPLASH model growth forecast based on BBER projections
	Reclaimed water treatment		Included in water sales		Sales of water for purpose of total sale
	Sewer growth		Same rate as sales growth		Sewer growth
9 Efficiency	Indoor/outdoor usage split	30%		34%	Assuming no behavioral change
	Residential consumption (kGal/yr)	74	**70** (74)	**67** (74)	Efficiency based on forecasted adoption of appliances
	Commercial & industrial consumption (kGal/yr)	650	**609** (650)	**582** (650)	Efficiency based on forecasted adoption of appliances
	Outdoor usage		No reduction		Assuming no behavioral change; no natural adoption of efficient technology
10 O&M	O&M escalator (%)	Assuming a 2.2% escalator on O&M cost after 2020			Consistent with historic growth
Base rate	Base rate ($/kGal)	Average Rate (kgal) Water: $4.65 / Sewer: $9.16 / Reclaim: $4.47			Calculation based on yield per product given unchanged rates for water
11 Capital costs	2019-2024 expenditures	**Average $242M** ($210M) **annual spend**			Based on Capital Budget Planning project list (additional reclaimed water projects added)
	2025-2030 expenditures	**Average $207M** ($190M) **annual spend; based on extension of 2019-24 capacity and R&R spend, with additional supply projects included totalling $187M**			Based on Capital Budget Planning project list (additional reclaimed water projects added)
City contribution	Annual city contribution	Annual payment continues in line with current charter agreement			Based on existing charter agreement
Debt	New debt ($M)	Assumes STAR plan of early debt retirements of $140M (in 2019)			Based on stated STAR plan
Scenarios	Debt, city contribution, rates	Scenarios tested: ▪ Holding new debt at 0 / raising debt to address cash gap ▪ Holding rates constant / raising rates to address cash gap ▪ Inclusion/exclusion of city contribution post 2023			Highlight tradeoffs and impact of decisions regarding rate and debt decisions in status quo projection scenario

1 Customer growth assumption applied as aggregate growth across classes

6 Energy opex breakdown and assumptions

Yearly energy opex breakdown, $M



Drivers of increased spend (2017-2020)

- **Salary increase** of $8M 2018 from 2017 (equal to all growth from 2014-2017)
- **Overtime expense** driven by hurricanes in 2017 and 2018
- Variability in **employee benefits** driven by reduction in pension liability and increase in health care costs
- **"Other"** category fluctuates based on inconsistent spend across a range of items including outages, professional services, supplemental workforce spending, and legal fees

Assumptions made for 2019-2030 projection:

- **Near-term (2019-2020):** expense figures based on internal spending projections
- **Long-term (2021-2030):** O&M increases are projected to stabilize around **~2%** per annum

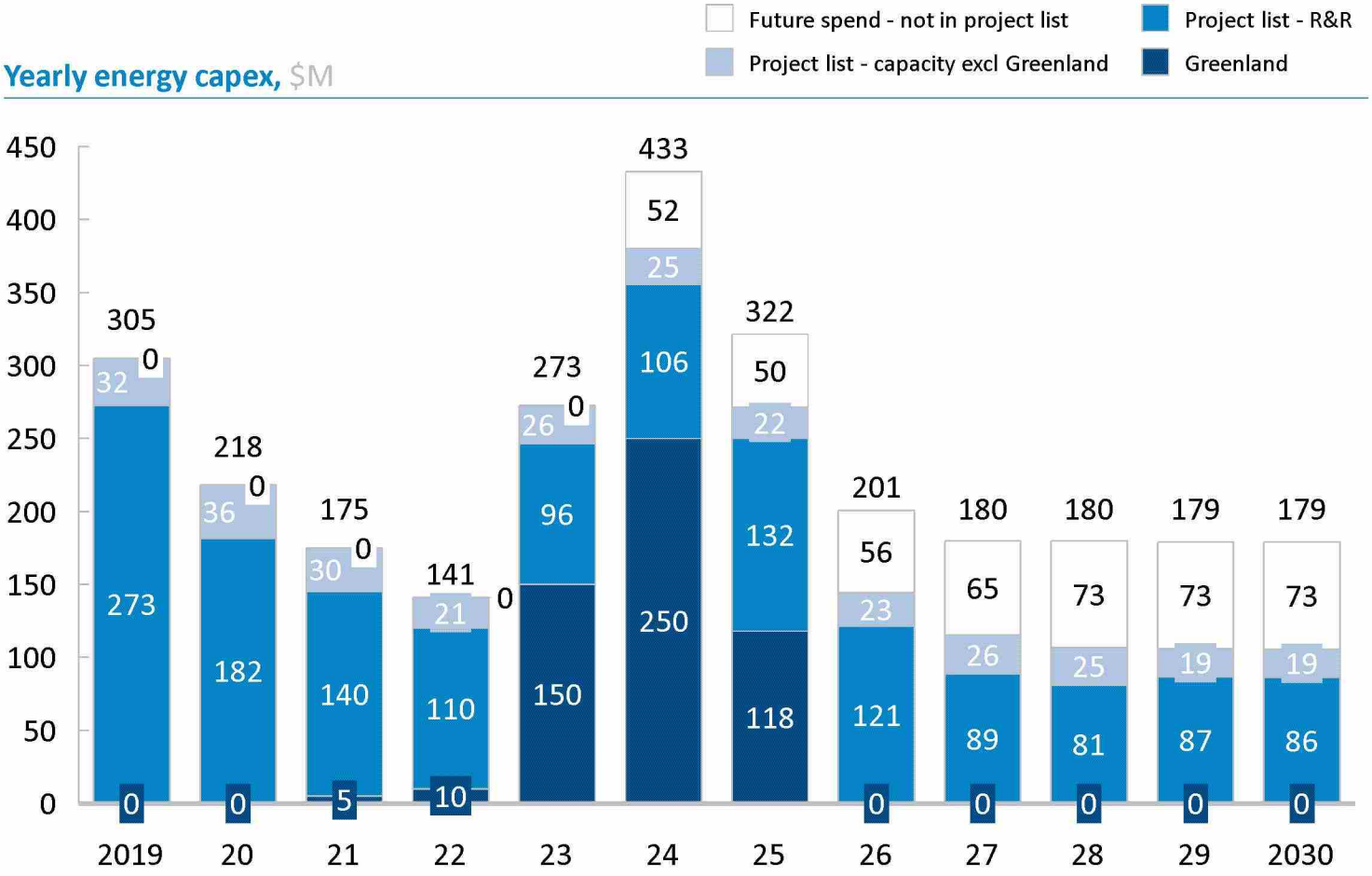
1 Interest, contracts & contingencies, city services, other services & charges, materials & supplies

2 Expected to fall in line with historic trends (e.g., barring one-time events)

SOURCE: JEA

7 Energy capex breakdown and assumptions

Yearly energy capex, $M



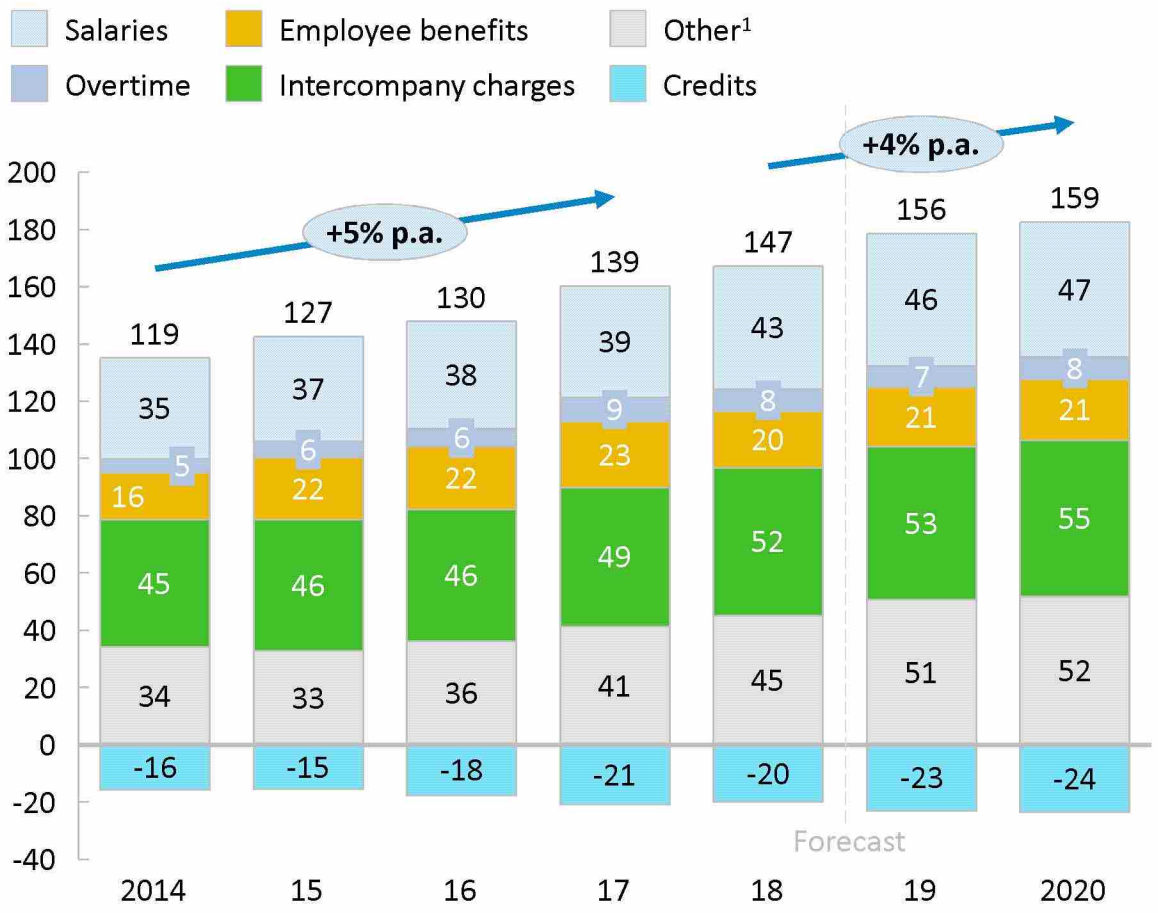
Key assumptions:

- Greenland CC replacement capacity project cost and schedule in line with IRP base case ($518M to be completed FY25)
- FY19-23 capacity and R&R spend based on current capital budget planning project list
- FY24-30 capacity and R&R spend based on current project list, with unspecified future spend added to bring each category in line with FY19-23 average
- Projects currently not on project list that could make up future spend include:
  - Resiliency / grid hardening investments
  - Grid modernization (e.g. AMS, remote monitoring and automation)
  - Communications infrastructure

SOURCE: JEA

10 Water opex breakdown and assumptions

Yearly water opex breakdown, $M



Drivers of increased spend (2014-2020)

- **Salaries** driven by increased hiring in 2018
- **Overtime expense** driven by hurricanes in 2017
- Variability in **employee benefits** driven by reduction in pension liability and increased healthcare costs
- **Intercompany charges** reimburse charges incurred in energy system; increased allocation to water
- **"Other"** category fluctuates based on inconsistent spend across a range of items including professional services, supplemental workforce spending, and legal fees

Assumptions made for 2019-2030 projections:

- **Near-term (2019-2020):** expense figures based on internal spending projections
- **Long-term (2021-2030):** O&M increases are projected to decline to approximately **~2.2%** per annum following a period of significant increases to costs

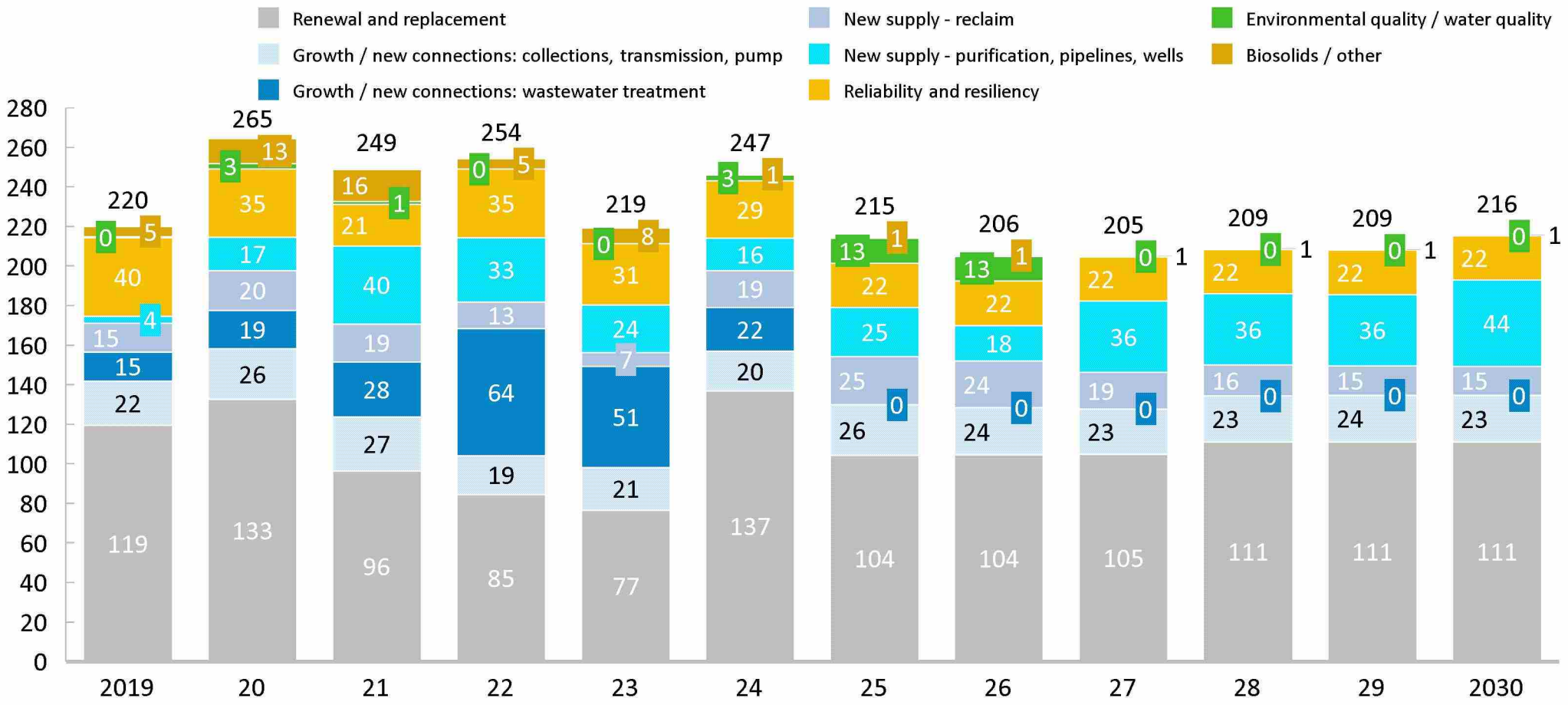
1 Interest, contracts & contingencies, city services, other services & charges, materials & supplies

2 Expected to fall in line with historic trends (e.g., barring one-time events)

SOURCE: JEA

11 Water capex breakdown and assumptions

Yearly water capex, $M



SOURCE: JEA

11 Water capex breakdown

Category	2019-24 assumptions	2025-2030 assumptions	Total 2019-2030 spend, $M, % of total	
Renewal and replacement	Project list categorized previously by Capital Budget Planning	Average yearly spend for 2019-24 assumed for all years	1,293	48%
Growth / new connections – wastewater treatment	Major expansions (Greenland, Southwest, Nassau)	No additional wastewater treatment expansion assumed needed	279	10%
Growth / new connections – collection, transmission, pump	Project list categorized by Capital Budget Planning	Average yearly spend for 2019-24 assumed for all years	199	7%
New supply – reclaim (including storage, new connections)	Project list categorized by capital budget planning	Project list from Planning added to forecast	205	8%
New supply – purification, pipelines, wells, other	TWMP, Rivertown, Nocatee South Water Repump; purified water phase 2 ($18/gal; 1MGD, FY20-22)	Purified water project (phase 3 = 10 MGD (FY25-30), $200M); 3rd River Crossing - $75M (FY30-34)	327	12%
Resiliency and reliability	Previously categorized by CBP	Average yearly spend for 2019-24 assumed for all years	325	12%
Environmental quality / water quality	Highlands Alternative Treatment project	Buckman BNR phase 2	32	1%
Biosolids and other	Buckman biosolids conversion upgrades and replacements	Buckman biosolids conversion upgrades and replacements	53	2%
			2,713	

SOURCE: JEA

Financial outputs

Financial assumptions used to develop energy and water status quo baseline scenarios

Financial assumption	Energy	Water
Use rate increases to meet cash flow gap	YES	NO
Raise additional debt to meet cash flow gap	NO (with exception of debt funding for Greenland)	YES
Fund city contribution post 2023	NO	YES

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Energy financial dashboard

Figures in $M unless otherwise noted

	Metric	2019	2025	2030	CAGR	Notes
Rates	Residential bill[1], ($/month)	$123.34	$133.09	$142.88	1.3%	Current Florida median is $125
Cash flow	Operating free cash flow	$554	$386	$387	-3.2%	
	Capital expenditures	($275)	($322)	($179)	-3.8%	2025 capex driven in part by Greenland
	Funds available[2]	$279	$64	$208	-2.6%	
	Debt service	($229)	($137)	($215)		Does not allow for city contribution
Balance sheet	Net funded debt	$1,943	$1,857	$1,394	-3.0%	
	Debt to capital ratio	60%	62%	57%	-0.5%	Current target is 50%

1 Monthly bill after taxes 2 For debt service and city contribution

SOURCE: JEA

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Water financial dashboard

Figures in $M unless otherwise noted

	Metric	2019	2025	2030	CAGR	Notes
Rates	Residential bill[1], ($/month)	$70.45	$70.45	$70.45	0.0%	Current Florida median is $77
Cash flow	Operating free cash flow	$347	$331	$340	-0.2%	
	Capital expenditures	($220)	($205)	($216)	-0.2%	Capex remains high through projection
	Funds available[2]	$128	$126	$124	-0.3%	
	Debt service	($109)	($112)	($111)	-0.3%	Allows for payment of city contribution
Balance sheet	Net funded debt	$1,217	$1,186	$922	-2.5%	
	Debt to capital ratio	41%	35%	27%	-3.7%	

1 Monthly bill after taxes 2 For debt service and city contribution

SOURCE: JEA

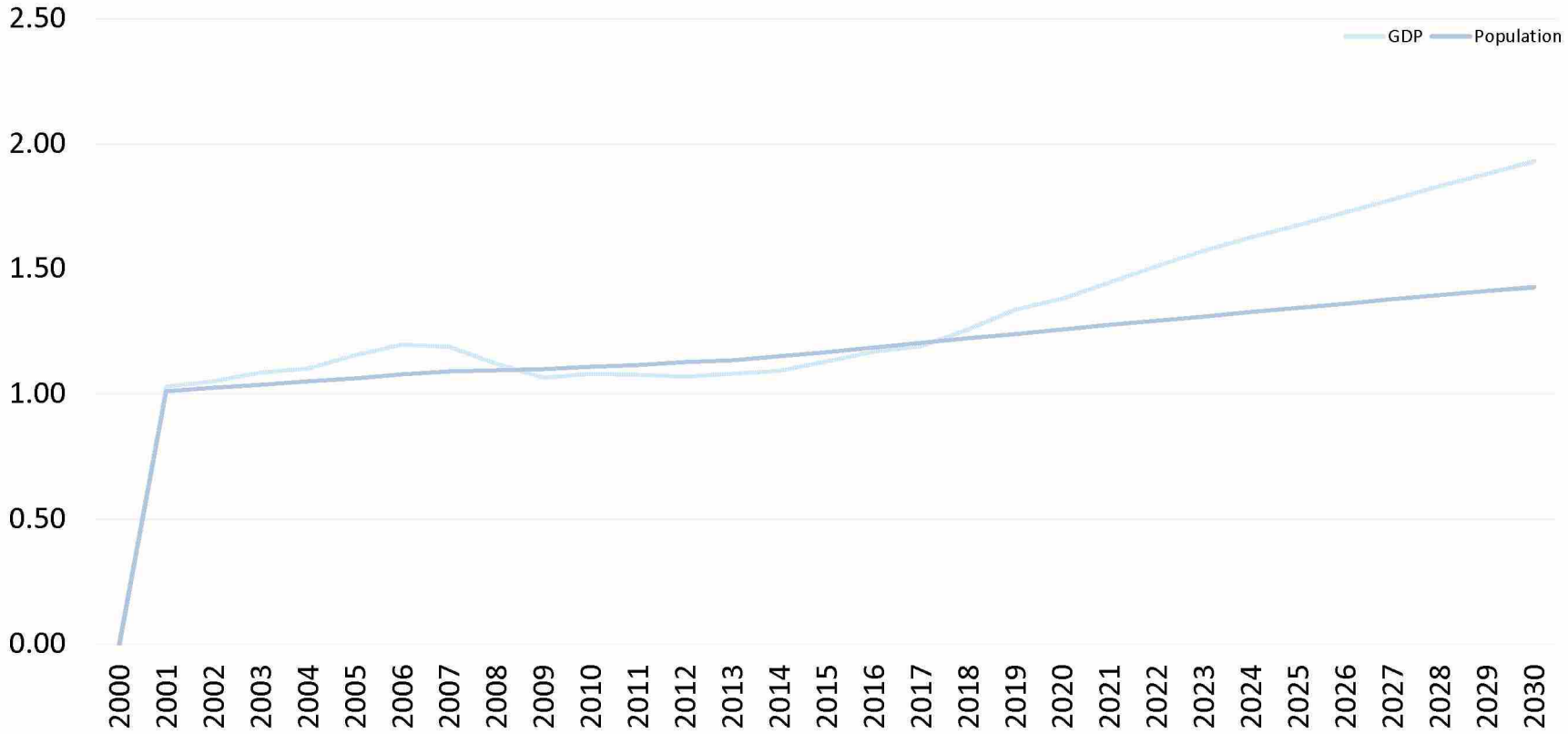
Supplemental assumptions

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

1 Customer growth likely to continue in the foreseeable future

Customer growth projections considers the U.S. Census Bureau (BOC): Population Estimates, Projections; Moody's Analytics Estimates and Forecasts for Duval County

Duval County Specific (Indexed to 2000)



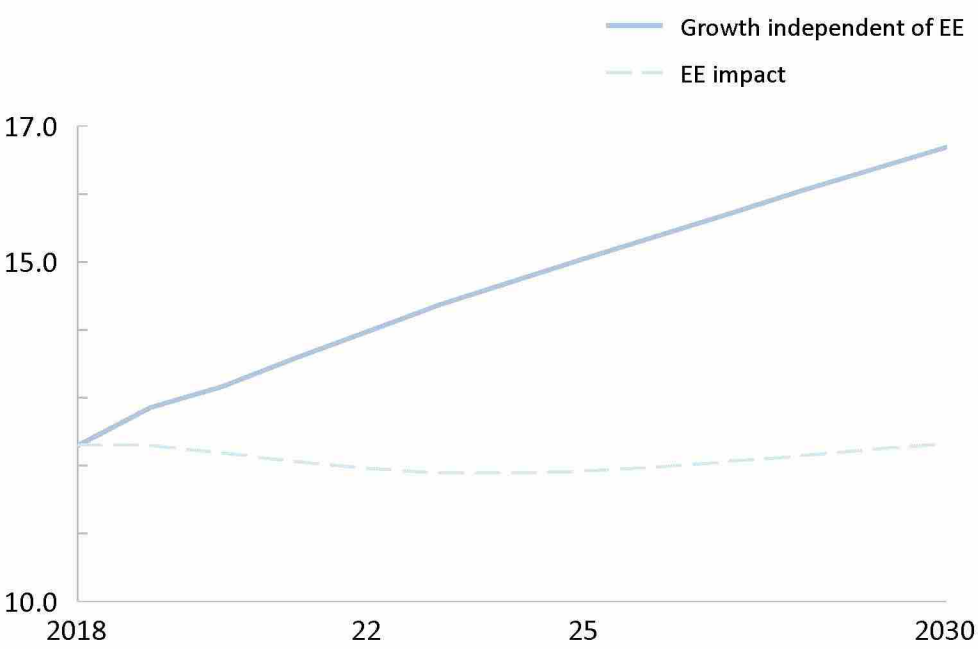
SOURCE: Moody's

[Slide 18]

Separate res and commercialInclude kwh and customer growth assumptionsRate increase percentage

2 Energy efficiency momentum is the largest driver of energy sales reductions, consistent with US utility trends

Annual energy sales,[1] thousand MWh

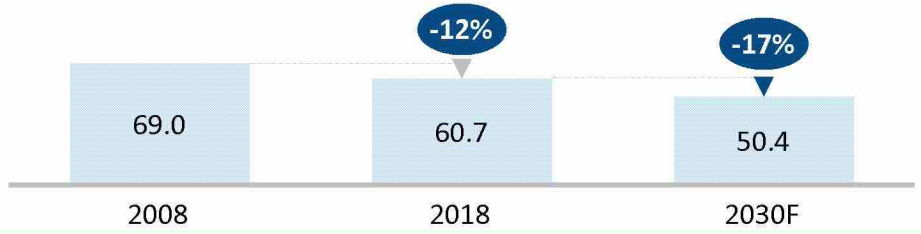


- Only considers commercial and residential EE adoption
- Gains driven by continued organic adoption of efficient products (e.g., cooling systems) as inventory turns in homes and additional uptake of "step-change" products such as LED lights and heat pump water heaters

Residential consumption per capita, MWh / customer

Commercial consumption per capita, kWh / sq foot

Industrial consumption per capita, MWh / $M GDP[2]



1 Sales estimate prior to incorporation of impact of DG and EV

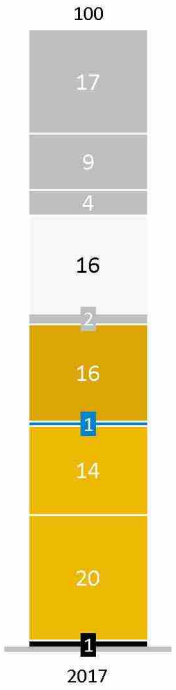
2 Flat industrial sales through period implies efficiency on a per-unit of GDP basis

SOURCE: JEA forecast, PowerIQ

2 Natural EE improvements with new products will drive up EE; consumer choices regarding new water and space heating technologies can have outsize impact on efficiency

★ JEA 2013 survey results

Commercial energy consumption,[1] %



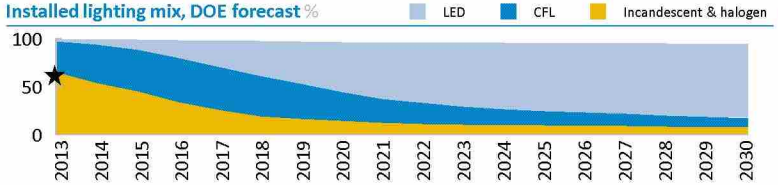
Residential energy consumption,[1] %

Main drivers

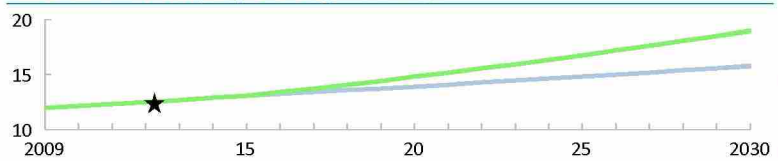
- Lighting
- Cooling
- Water heating
- Space heating
- Other *(examples, not exhaustive)*

Trends (residential forecasts)

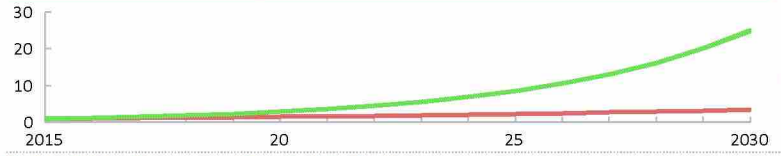
Installed lighting mix, DOE forecast %



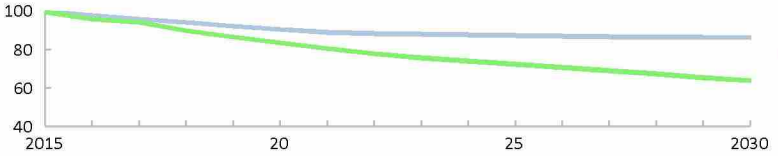
Residential HVAC heat pump efficiency, SEER rating



Heat pump water heater penetration[2], % installed



Residential heating energy intensity (Btu:Btu)[2], % indexed to 2015



Reduction assumptions

Base case — Low case - used for resi and commerical customers in forecast

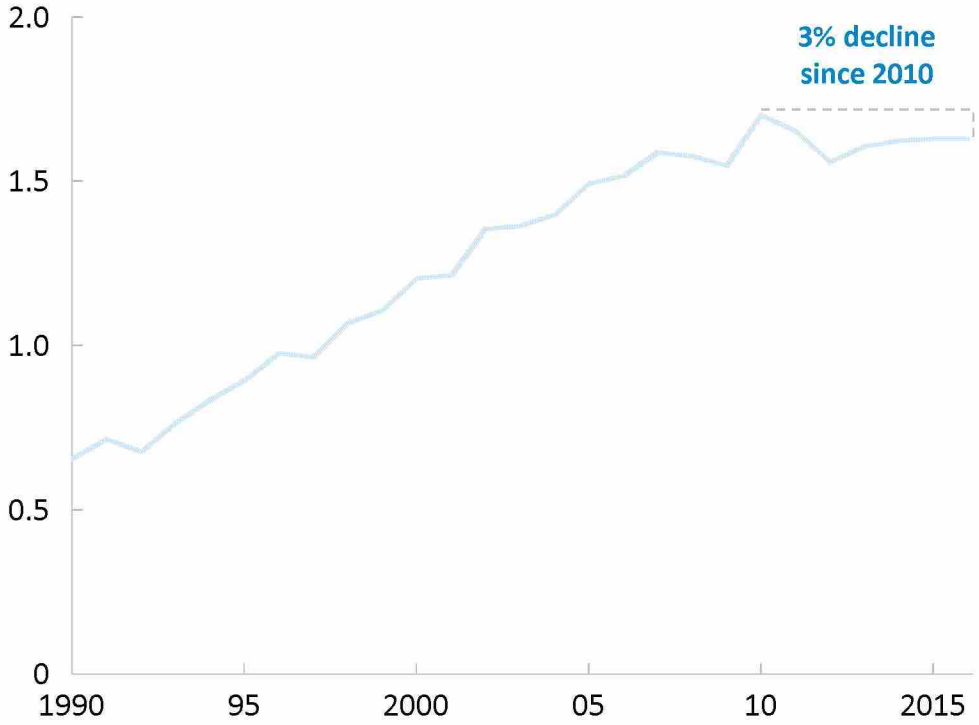
- LED installed stock penetration increases to 100% for commercial and residential customers by 2030 (slightly above DOE estimate of 80%), enabling step-change in efficiency for bulbs replaced
- Lighting efficiency drives ~20% of residential and ~30% of commercial EE savings
- New units are 0.4% - 0.9% more efficient for the same level for each year between manufacture, resulting in natural EE as inventory turns; with assumption of 15 SEER rating by 2030
- JEA customers were slightly below regional average efficiency in 2030, indicating additional room to grow beyond what is forecasted
- Cooling drives ~30% of residential and ~20% of commercial EE savings
- Improvements in efficiency of resistance units have nearly plateaued; decision to switch to heat pump water heaters would have outsize impact. 20% install heat pump water heaters by 2030
- Impact is higher for residential customers (~10%) than C&I due to low electricity utilization for C&I water heating
- Adoption of heat pumps reduces winter heating in adopted homes by 50%-60%; expecting 5-10% adoption
- Impact of space heating higher for residential customers than C&I, as C&I typically utilize gas heating
- **Appliance efficiency:** JEA average customer energy star rating may indicate room for continued residential update
- **New house characteristics:** continued increase in gas connections in new homes could lower energy use ~20-30% per customer; however increased size of new homes could increase energy use

1 ECS breakdown, South Atlantic, % 2 2013 JEA customer survey did not cover heat pump water heater penetration or residential heater age

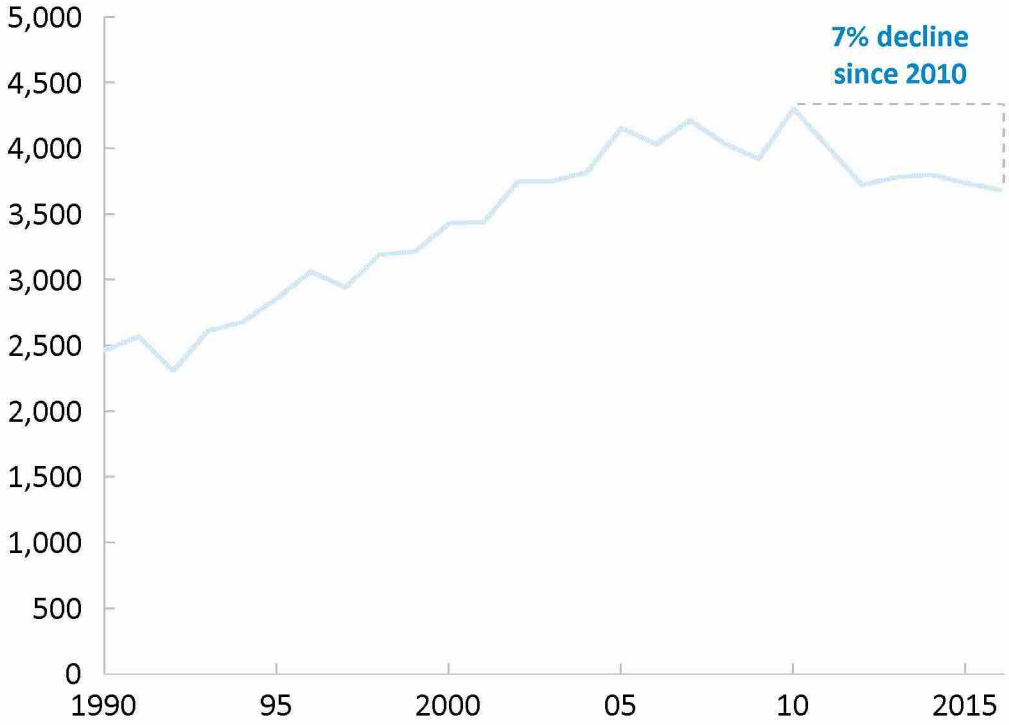
SOURCE: EIA RECS 2015 and CBECS 2012, Pathways database

2 National residential trends highlight declining use per capita after peaking in 2010

U.S. annual residential electricity sales, Trillion kilowatt-hours



Residential electricity sales per capita, kilowatt-hours per persons



- Per-capita sales have declined since 2010, a trend which is forecast to continue
- These widespread efficiency gains are expected to drive further declines, even as electrification (e.g., of vehicles) increased demand

SOURCE: EIA

3 Customer needs will drive choice of DG system

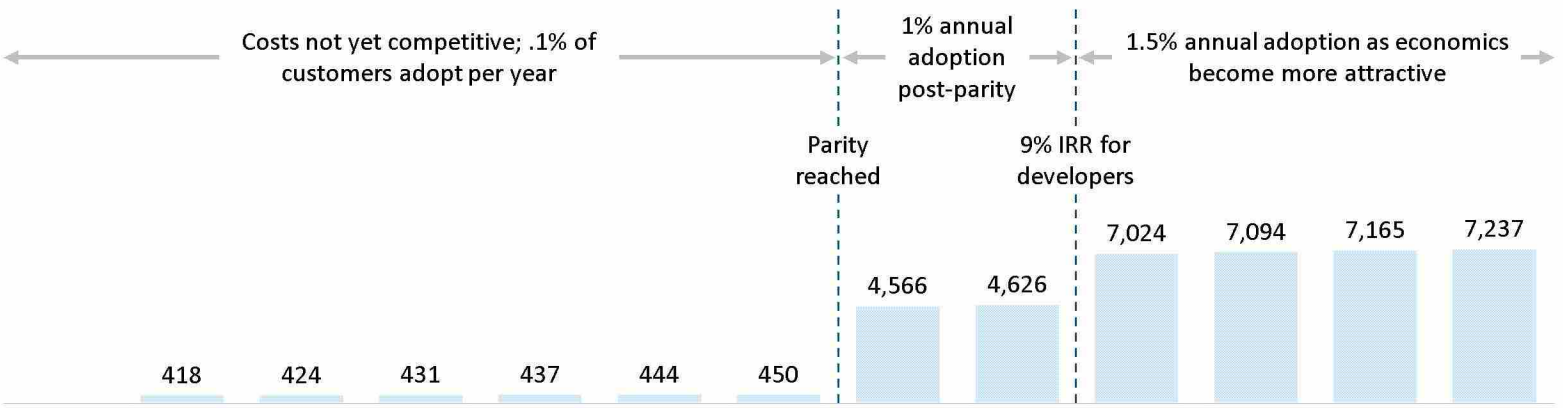
	% of total sales	Customer characteristics	Considerations for DG	DG system modelled
Residential	44	▪ Typical energy use: 1,000 kWh/month ▪ 69% single family homes ▪ 31% of homes built after 2000 (vs. 19% in US)	▪ Will consider solar DG once economic ▪ Typically generate more energy than consumed; storage needed to derive full value from solar ▪ Value attributed to backup power provided by storage	Solar plus storage
Commercial	33	▪ Average peak demand < 1000 kW ▪ Peak demand typically occurs midday ▪ Largest customers include retail chain operators and campuses	▪ Will consider solar DG once economic, with short payback period ▪ Will consider third-party installation in exchange for reduced electricity costs ▪ Energy needs typically too large for solar to fully offset; storage consideration typically separate	Solar alone
Industrial	22	▪ Average peak demand > 1000 kW ▪ Peak demand varies ▪ Largest customers include factories and hospitals	▪ Will consider solar DG once economic, with short payback period; lower electric rates make solar economics poorer[1] ▪ CHP may be economical for some customers with opportunity to increase operational efficiency (e.g., coincident heat and power loads) ▪ Customers are unlikely to build out full DG for resilience	Solar alone CHP

1 Industrial customers adoption solar receive standby rate

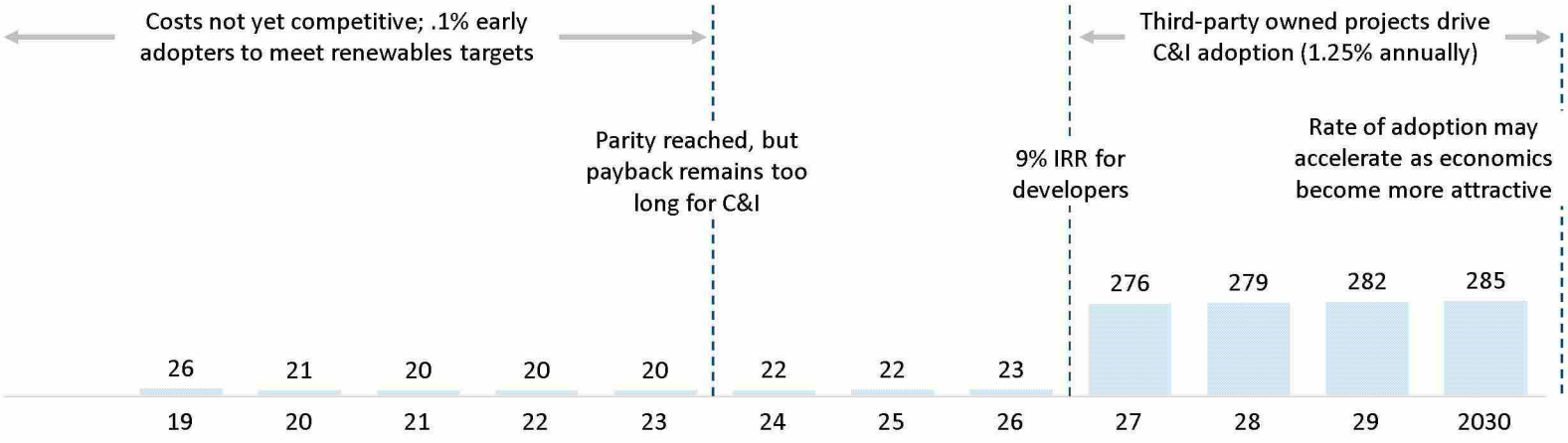
SOURCE: Solar cost model, SEIA

3 Solar adoption rates accelerate as economics improve for stakeholders

New residential solar + storage customers, # of customers



New commercial & industrial solar customers, # of customers



- Uptake is expected to increase as economics become viable for various stakeholders (e.g., system owners, developers)
- Rates of adoption are also expected to increase as parties become familiar with markets and are able to achieve better economics (e.g., lower risk, lower cost, potential for higher electricity prices)
- These trends will continue beyond the forecast period as some features become standard parts of upgrades and new homes (e.g., solar rooftops, mandated solar for new homes in California)

1 x

SOURCE: Sigrin and Drury, Diffusion into New Markets: Economic Returns Required by Households to Adopt Rooftop Photovoltaics, NREL

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

3 Battery and solar price trends and forecasts

[redacted]

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

3 Residential DG is attractive for homeowners whereas commercial is attractive for 3rd party developers

[redacted]

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

3 Countrywide trends provide indication of potential uptake after Jacksonville residential/C&I solar pricing reaches parity

[redacted]

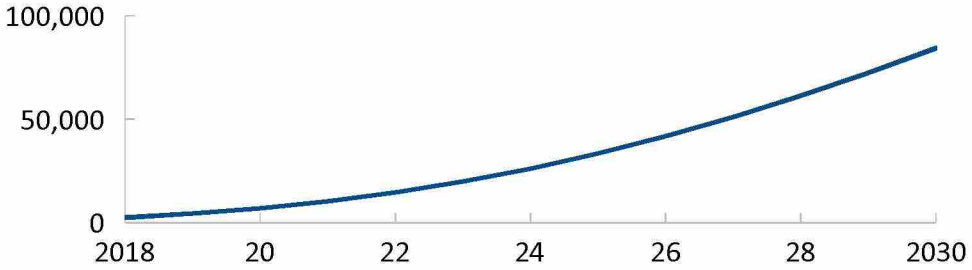
The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

4 CHP economics for a generalized JEA industrial customer are not compelling, consistent with recent US installation history

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

5 30k EVs expected in in JEAs territory by 2030 based on EV modeling and penetration today

EV fleet energy consumption, MWh



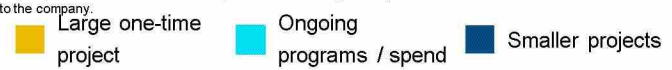
85k MWh in energy sales in 2030 because 31k EVs are added to Jacksonville fleet, constituting 3.6% of light duty vehicles

[redacted]

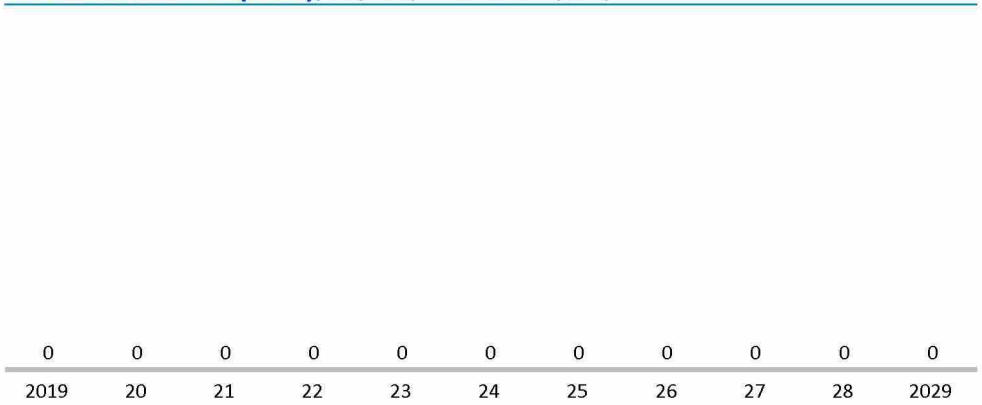
[redacted]

SOURCE: Federal Reserve income per capita data; Automotive practice TCO-based forecasting models, Florida Highway Safety and Motor Vehicles , Internal forecasts

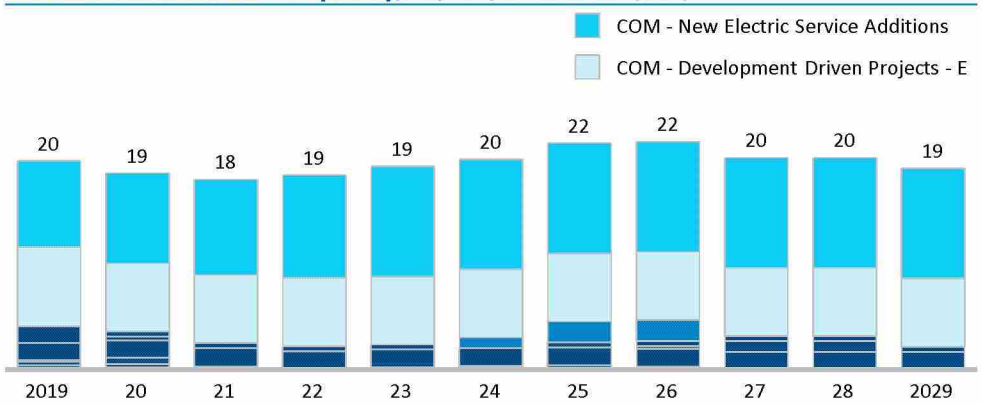
7 Breakdown of known capex spend: capacity



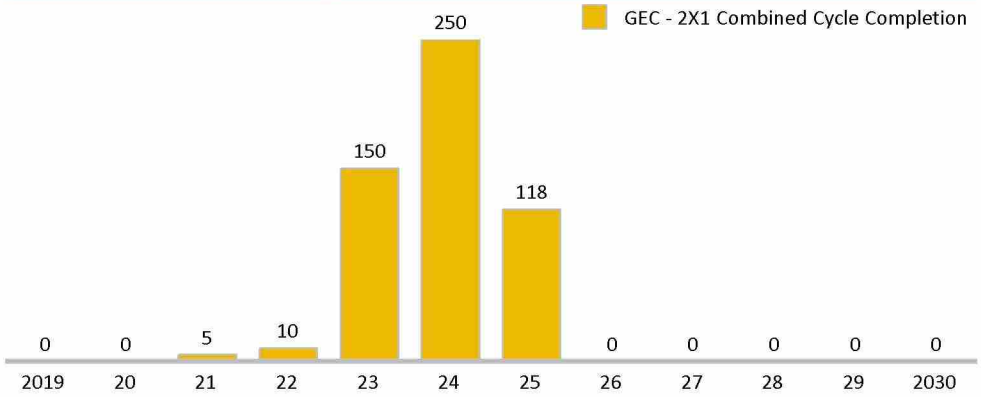
Electric Other – Capacity, top expenditures ($M)



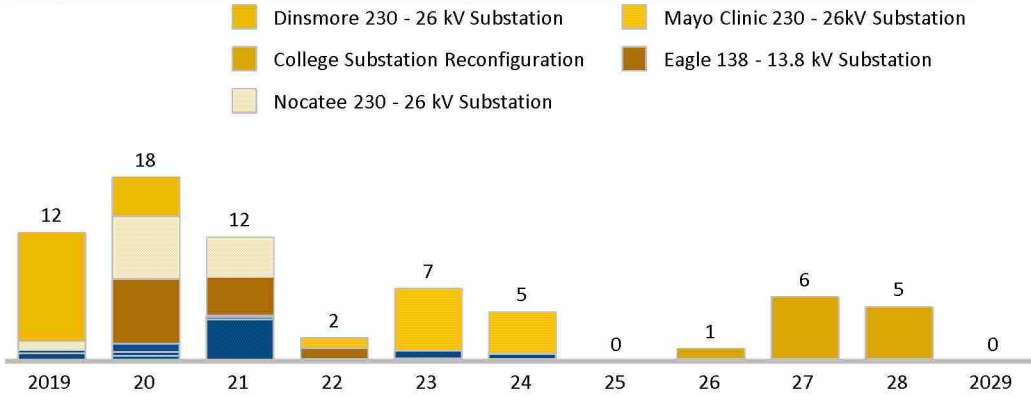
Electric Distribution – Capacity, top expenditures ($M)



Expanded Generation - Capacity, top expenditures ($M)



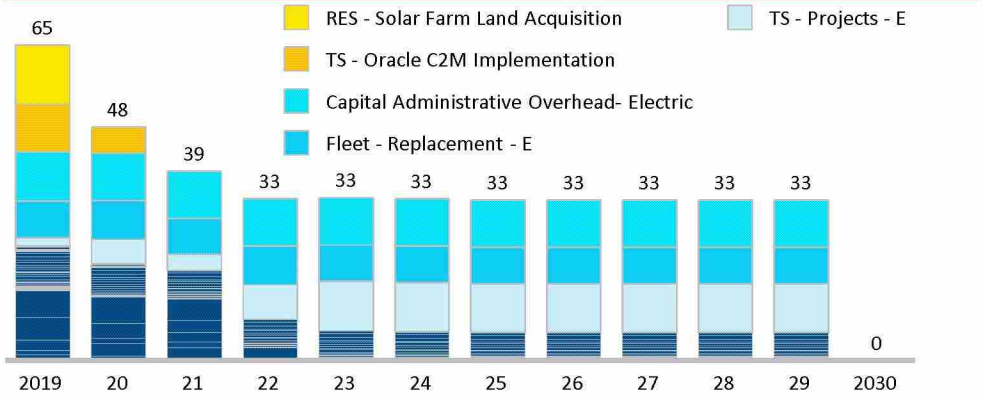
Electric System Substation 7 Transmission – Capacity, top expenditures ($M)



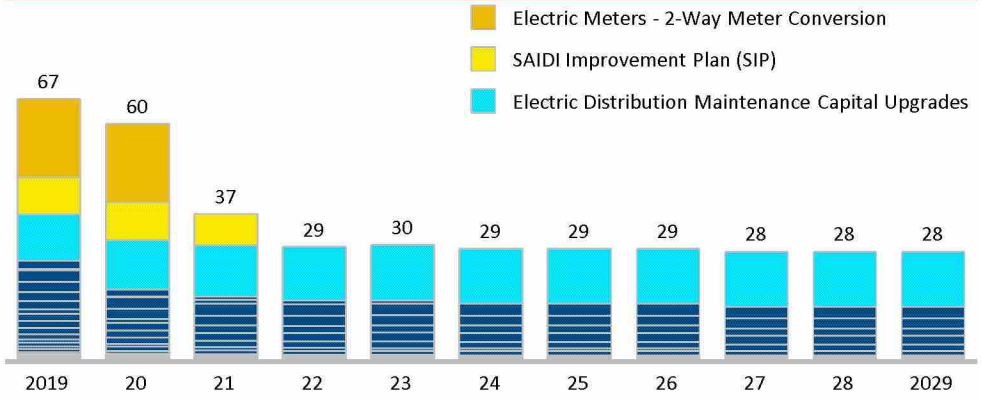
7 Breakdown of known capex spend: R&R

Large one-time project | Ongoing programs / spend | Smaller projects

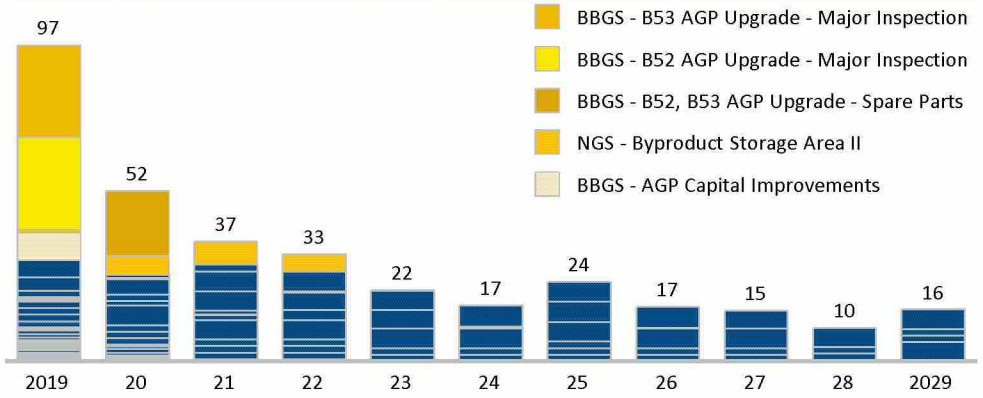
Electric Other – R&R, top expenditures ($M)[1]



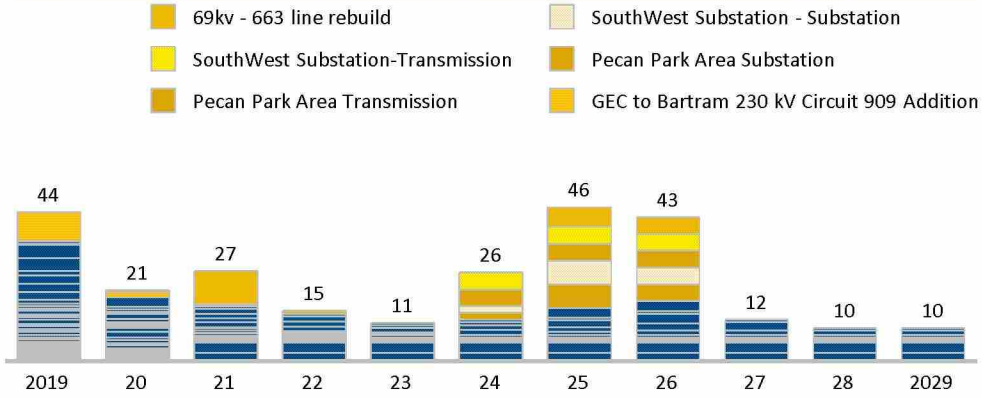
Electric Distribution – R&R, top expenditures ($M)



Electric System Generation – R&R, top expenditures ($M)



Electric Substation and Transmission – R&R, top expenditures ($M)



1 General Administration Office Building removed from energy forecast ($2, 33, and 15M in 2019 – 2021 respectively)

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

8 Water sales projections will be primarily driven by population and tempered by continued adoption of water-efficient appliances

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

9 In the absence of action taken by JEA, water efficiency gains will continue to take place through replacement of indoor appliances

[redacted]

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

9 Drivers of water savings

[redacted]

Status Quo Baseline

The first step in the process

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Disclaimer

The following **"Status Quo Baseline"** financial projections are presented solely for JEA Board of Directors planning and action in connection with the development of a strategic plan. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are a mathematical representation of a status quo business case and do not reflect numerous likely future events and future JEA actions that will likely cause actual results to differ materially from this business case. The presentation should be viewed in its entirety with individual slides or sections of the presentation having no greater or reduced significance relative to other slides or sections of the presentation

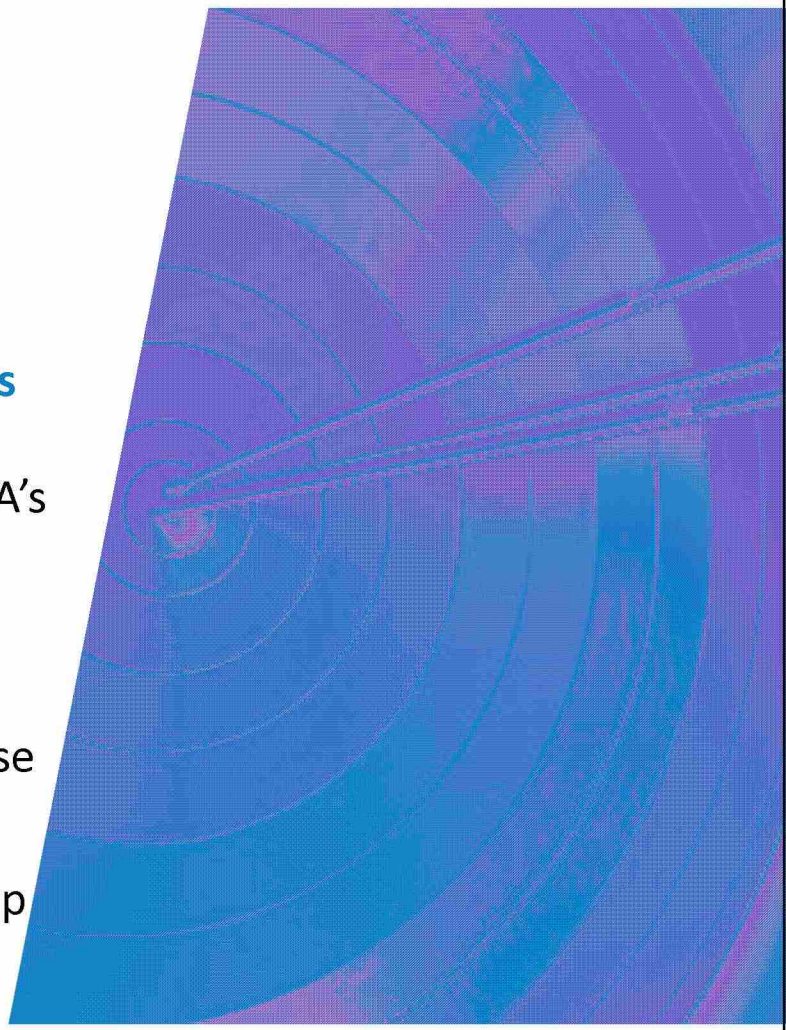
Goals for today

What we are sharing

- We have developed a **"status quo baseline"** for JEA's energy and water systems – financial projections for JEA if JEA were to take no action beyond business as usual through 2030
- The status quo baseline was developed using the **best available estimates of sales and costs**, including the impact of external trends, assuming current laws and regulations

Agenda

- Review JEA's **historical financial performance**
- Present the **emerging trends** affecting utilities nationally and how they will impact JEA's energy and water system
- Present **JEA's projected financial performance through 2030** in light of these market forces
- Review **next steps** to develop a strategic plan for JEA



Approach to the status quo baseline

What the status quo baseline IS…

- A projection of JEA's finances through 2030 based on current plans only, reflecting the impact of external market forces on JEA
- A tool for JEA to develop a strategy and action plan to succeed in light of market forces

… and IS NOT

- A financial forecast or most likely scenario for JEA
- A forecast that reflects potential JEA actions/initiatives
- A forecast that reflects likely changes to laws or regulations
- A tool for making specific resource planning or investment decisions
- A substitute for or input into the IRP / IWRP

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

The big picture for energy status quo : JEA faces difficult financial choices in the years ahead

In the last 20 years:

- JEA has added the population of Tallahassee to its customer base, driving up costs while sales have stayed flat

In the next 10 years:

- Sales decline accelerates even as JEA adds another Tallahassee, creating a cash flow gap of $1.9B by 2030
- JEA will need to raise rates by 24%, ($19.54 per month per customer) AND stop the city contribution post-2023

Beyond 2030: the new normal

- Rate increases of greater than 2% per year needed to cover growing deficits, with still no ability to pay the city contribution
- Potential system priorities like undergrounding T&D lines continue to go unfunded

The time is now to take bold action to fundamentally change the trajectory of the energy business

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

The big picture for water status quo: JEA is financially stable in the next 10 years, but will be challenged past 2030

2000 — 2018 — 2030

In the last 20 years

- JEA has invested heavily to improve its system, returning $8.5M per year in environmental credits to the city (equivalent to 3 months of city contribution)

In the next 10 years

- Additional capital investments to address upcoming supply challenges and expand system lead to a funding challenge of $400M by 2030
- The funding challenged can be solved by temporarily raising rates by 15%, ($10 per month per customer) OR increasing net debt by $200M, WHILE continuing to pay the city contribution

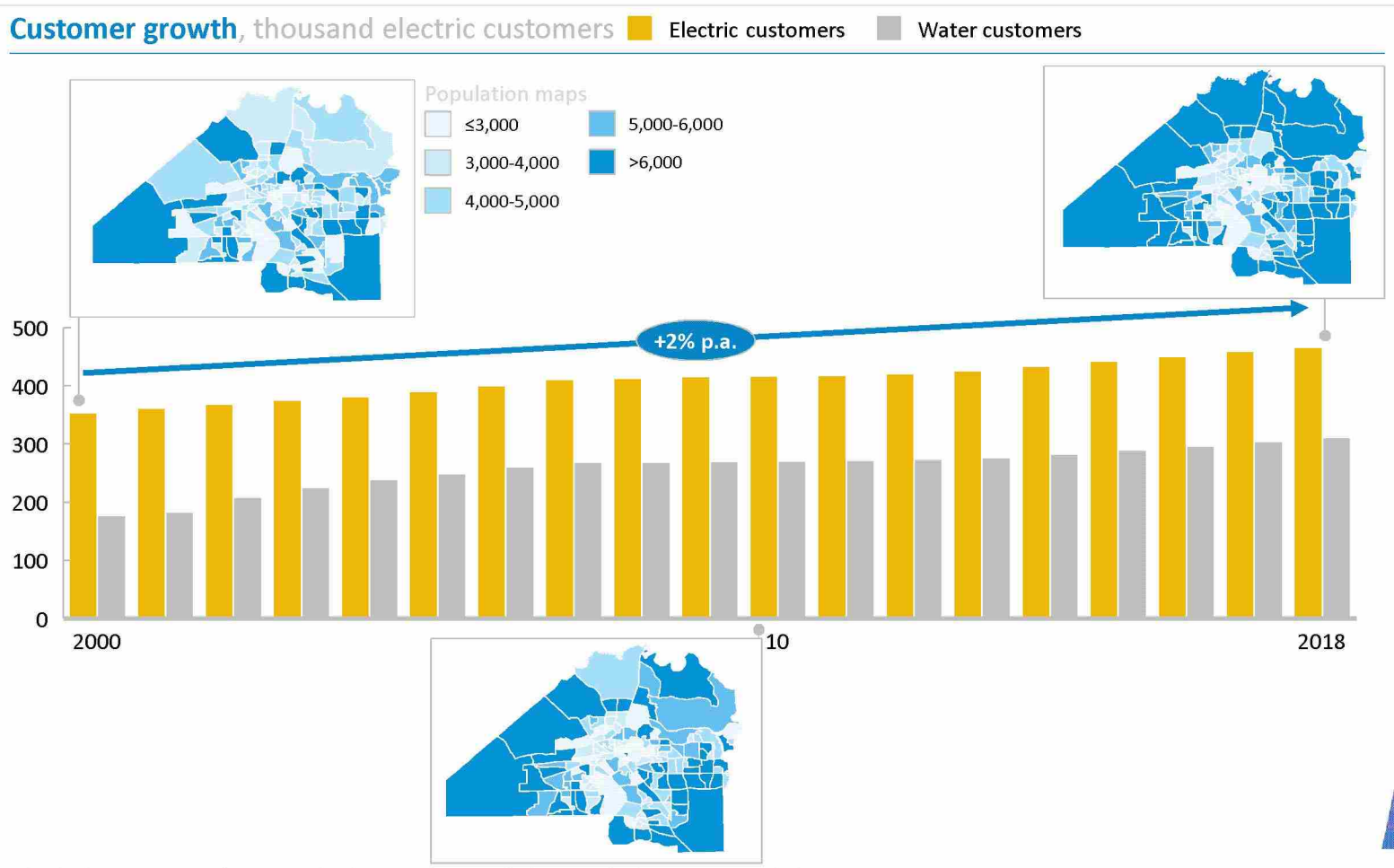
Beyond 2030: the new normal

- Future priorities will create funding needs over $3B – septic tank phase-out, purification, river crossing
- JEA will need to raise rates, having limited ability to borrow additional capital

By taking action now, JEA can proactively strengthen its water business to address future challenges

Since 2000, JEA has added the city of Tallahassee to its customer load…

Customer growth, thousand electric customers



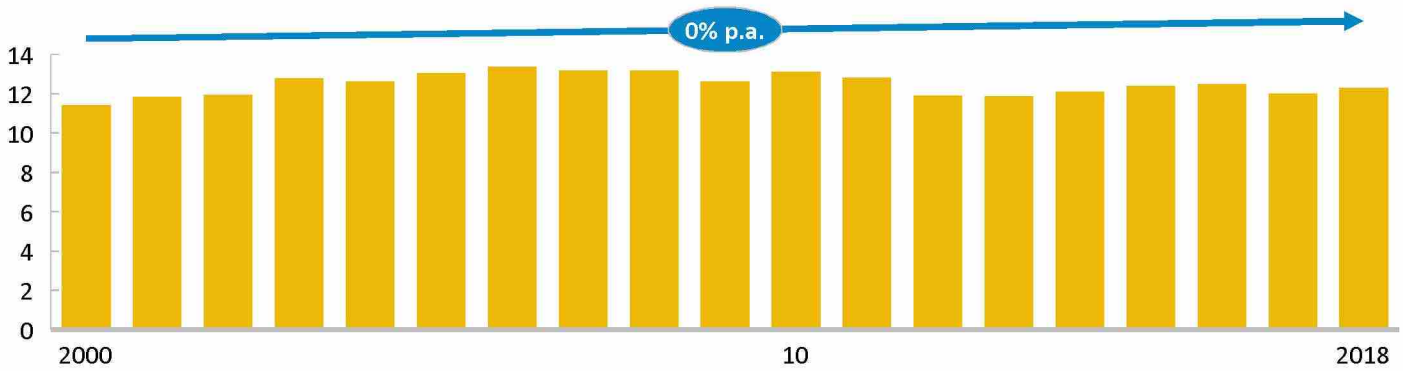
JEA has increased its electric customer base by **112,000 customers** since 2000 – equivalent to the city of Tallahassee's utility customer base (121,000 customers)

Water has increased even faster (3% annual customer growth)

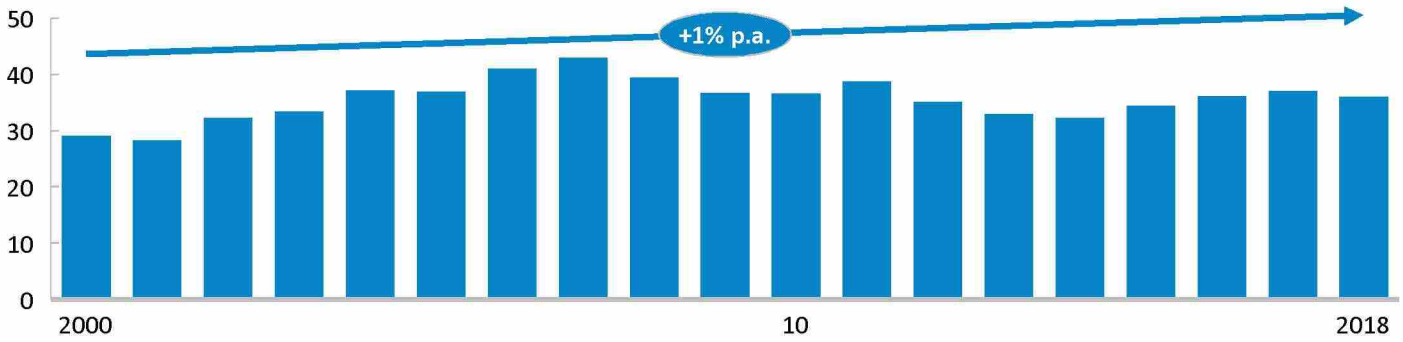
1 Based on distribution capacity spend per customer (7-10k new customers annually, $18-20M in distribution capacity spending)

…Without changing energy sales

Energy sales, million MWh



Water sales, M kGal



Energy sales have remained flat, and have declined since 2007

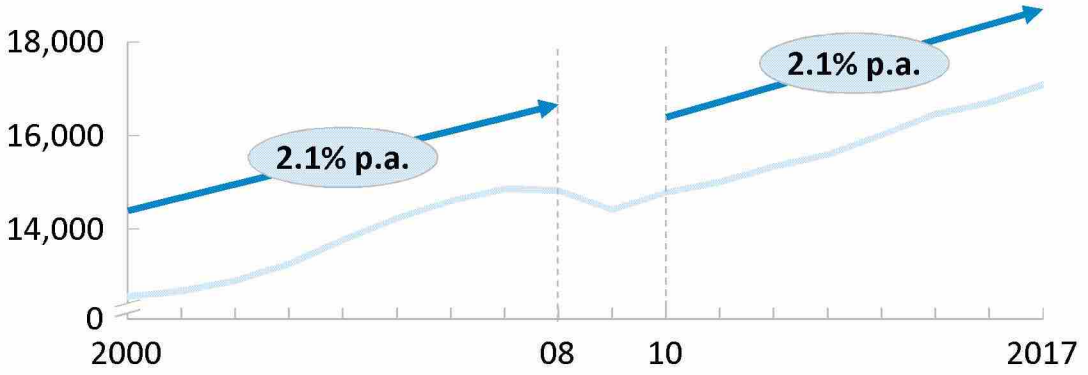
Each new customer adds **~$2,500** in energy capital costs and **$100-200** / year in ongoing operating costs[1], contributing to rising costs

Water sales have been affected by weather, water efficiency, and customer behavior, but have sustained growth

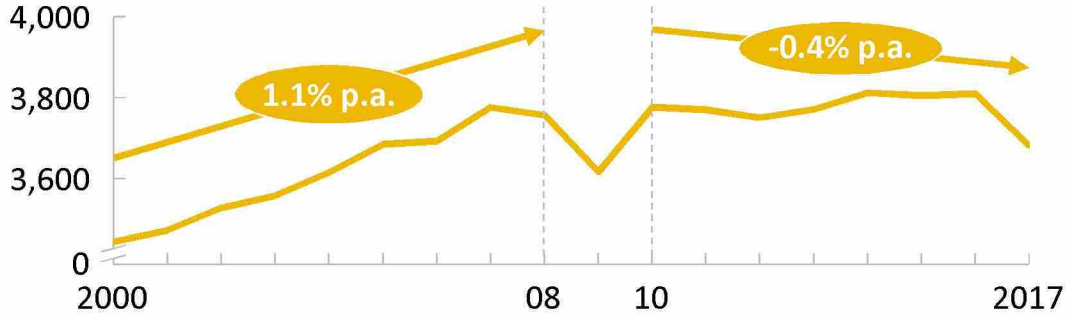
1 Based on distribution capacity spend per customer (7-10k new customers annually, $18-20M in distribution capacity spending) and additional materials & supplies spend / new customer

Energy usage has declined nationwide despite growing GDP – this trend is not limited to Jacksonville nor is it going away

Real GDP growth, USD, trillions



National retail electric sales volume, MWh, millions



Key drivers (have already impacted JEA)

- **Energy efficiency:** Residential electricity sales per customer have **declined over 10% since 2010**

Emerging drivers (limited impact on JEA to date)

- **Distributed generation:** Distributed solar accounts for 30% of US solar, with **~15-20% annual growth expected through 2030**
- **Electrification:** Emergence of electric vehicles (currently .2% of vehicles) and electrification presents opportunity to increase sales but has not offset losses to date

SOURCE: EIA, Energy Velocity, USGS

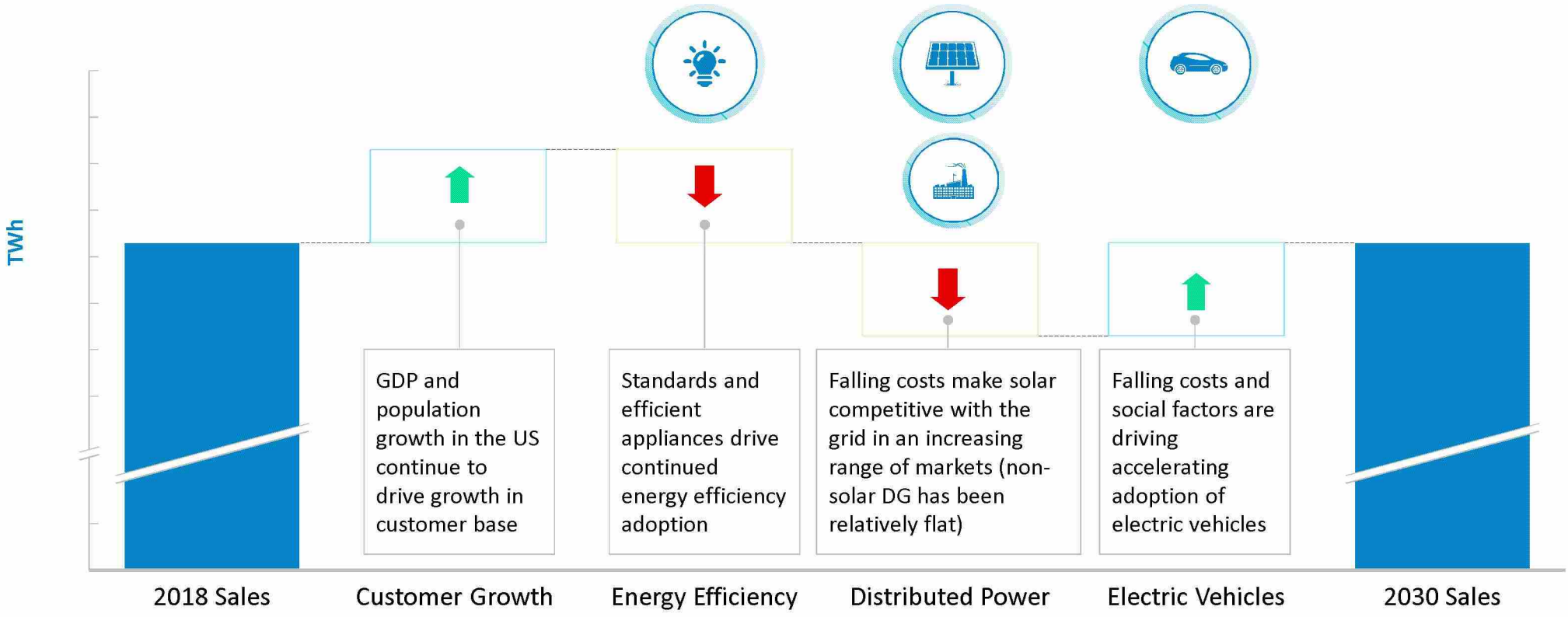
Emerging trends relevant to JEA will primarily impact energy sales and water costs

Key driver of projected change

	Sales	Costs
Energy	▪ Low fixed charges mean **revenues are highly dependent on sales** ▪ Sales forecast will be impacted by both **established trends** (energy efficiency) and **emerging technologies** (rooftop solar)	▪ **Limited and well-established** major cost items (e.g. to replace retiring coal capacity) in status quo case
Water	▪ Higher fixed charges mean **revenues are less sensitive to sales** compared with energy ▪ Sales forecast will see **continuation of established trends**, with limited technology impact	▪ **Growing investment** in new system priorities (e.g. in reclaimed water and purification)

National trends will impact JEA substantially by 2030

2030 JEA energy sales drivers

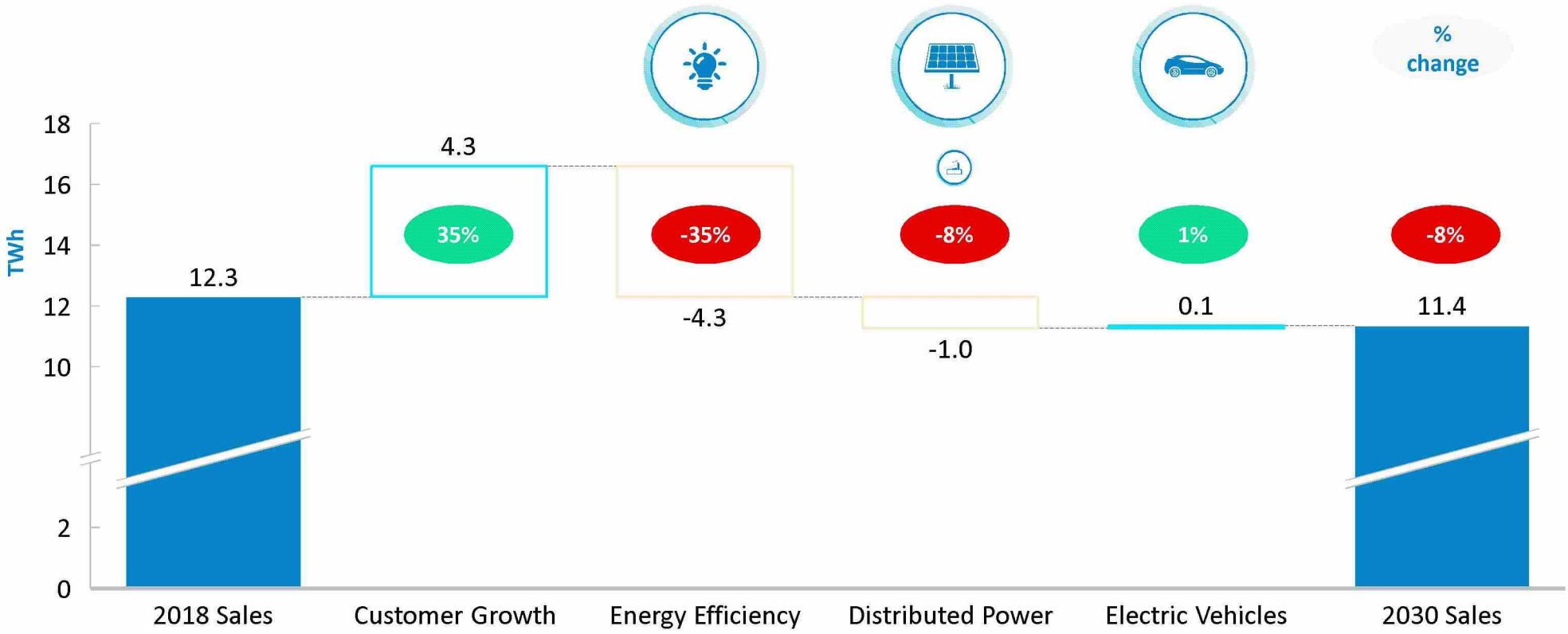


[Slide 11]

Anticipating 3.5% penetration in Jacksonville by 2030

Energy efficiency and solar will drive down JEA's sales by 8% through 2030 despite a growing customer base

2030 JEA projected energy sales, TWh



[Slide 12]

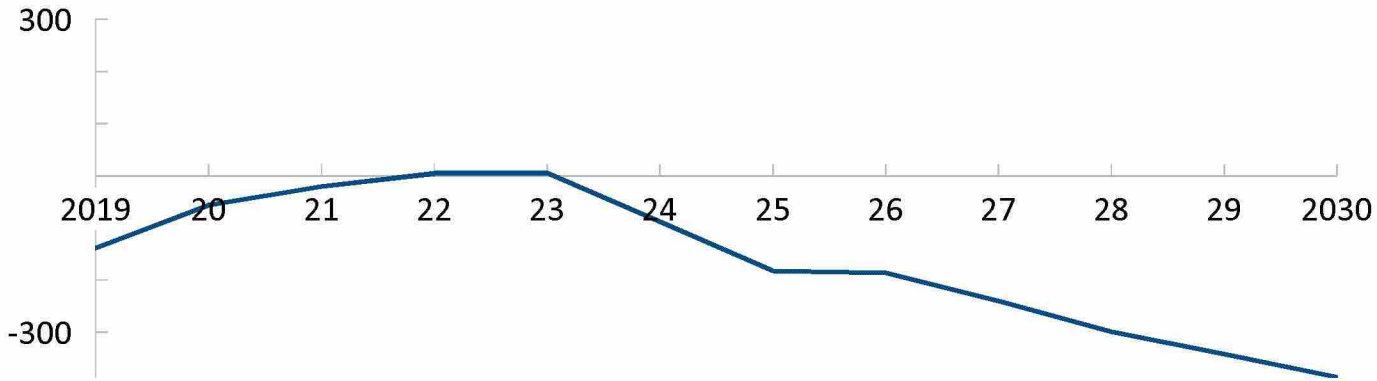
Anticipating 3.5% penetration in Jacksonville by 2030

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Energy: Rising costs and lower sales lead to structural deficits by 2023 and a $1.9B cash flow gap

Cash flow projections, $M

(no rate increase, no additional debt, with city contribution)[1]



Key drivers and assumptions

- **Decreasing energy sales** despite increasing customer base
- **O&M** costs continue to increase
- Persistent need for **capital expenditures** to replace retiring capacity, connect new customers, and maintain infrastructure
- **Non-fuel purchased power** driven up by Vogtle
- Continued growth of **city contribution** requirement

To solve the cash flow gap:

Rate increase

42%

OR

Rate increase

24%

⊕

No city contribution past 2023

=

Zero cash flows and continued need for rate increases post 2030 to fund basic operations

1 Baseline cash flow projections assume no new debt outside of Greenland funding 2 Relative to 2019

SOURCE: JEA

[Slide 13]

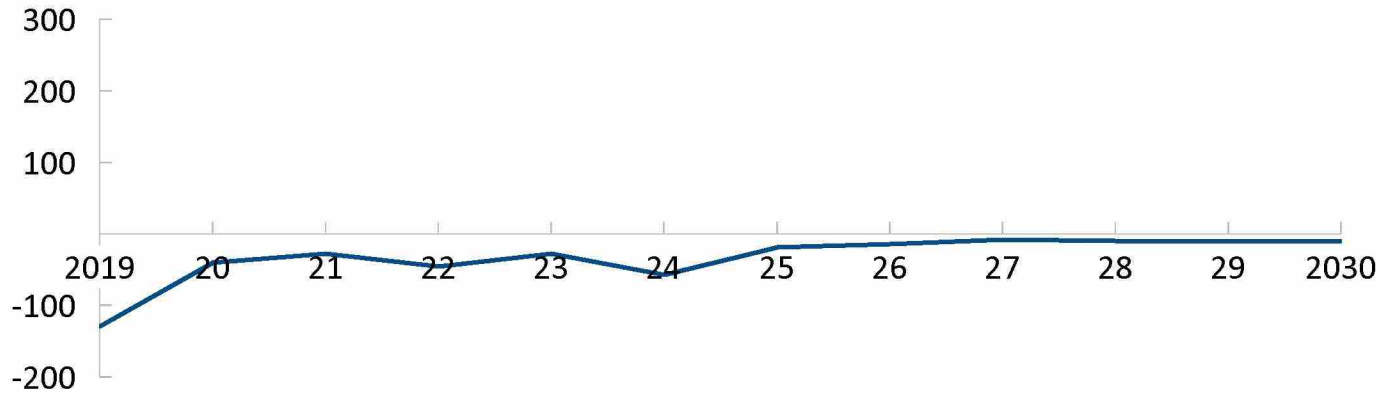
Add note for three year deficit explaining utilizing funds to handle

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Water: Need for capital investment in the water system and reduced customer usage leads to reduced cash flows by 2030

Cash flow projections, $M

(no rate increase, no additional debt, with city contribution)[1]



Key drivers and assumptions

- Persistent need for **capital expenditures,** particularly in early years of projection, to fund new supply, new connections, and system maintenance
- **O&M** costs continue to rise faster than revenues
- **11% growth in sales,** accounting for decreasing per-capita water use
- Continued growth of **city contribution** requirement

To solve the cash flow gap:

Additional debt

$200m

OR

5-year rate increase

15%

From 2020-2024

=

Zero cash flows and need for rate increases or additional debt to fund major capital investment post 2030

1 Baseline cash flow projections assume no new debt

SOURCE: JEA

[Slide 14]

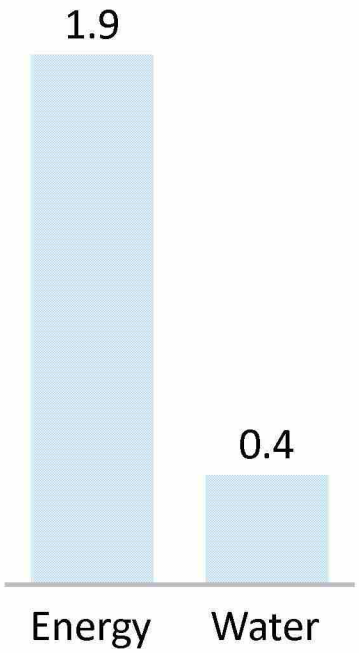
Add note for three year deficit explaining utilizing funds to handle

Beyond the status quo baseline: additional downside potential in both water and energy financial projections

Uncertainty	Energy impact	Water impact
Economic forecast	▪ A recession would drive down growth and per-capita consumption compared with current steady growth forecast 	▪ A recession would drive down consumption, though effect would likely be less pronounced than for energy 
Regulation	▪ Impact depends on regulatory change (e.g. carbon tax, solar incentives could drive DG, rollback of air quality regs support coal) 	▪ Impact depends on regulatory change (e.g. water quality or resiliency requirements could require more or less capex) 
Distributed technologies	▪ Accelerated adoption of DG (solar) driven by lower costs and ease of access could have significant impact on sales 	▪ Significant adoption of self-consumption technologies (e.g., showers) unlikely 
Adverse weather / climate change	▪ While weather forecast is uncertain, adverse effects (storms, lost winter sales) likely exceed positive impacts 	▪ While weather forecast is uncertain, adverse effects (e.g. droughts) likely exceed positive impacts 
Technological innovation	▪ Electrification and EVs could impact on sales at high levels of adoption, though impact is muted compared with DG 	▪ Increased integration of technology to manage leaks and system operations will improve recovery of non-revenue water 

To solve the cash flow gap, JEA will need to explore strategic action along all available levers

Cash flow gap, 2019-30, $B



Some combination of all available levers will be needed to close gap

Revenues

- Drive growth in business
- Overhaul rates

Expenses

- Reduce operating costs
- Reduce capital execution costs
- Reduce / reprioritize capex needs

Finances

- Optimize debt financing
- Negotiate city contributions

JEA will develop a plan of action consistent with its strategic goals

Strategic Goal: Drive an increase in the value of JEA now and in the future

Corporate measures and metrics

Value to our customer

- Provide JEA customers with safe and reliable electric, water and wastewater **services at a rate structure equal to or less than industry average**
- Maintain **customer service standards and experience** within the top quartile of the industry
- Expand our trusted partner **relationship with our customers**

Financial value

- **Maintain financial performance metrics** necessary to preserve aa3 / AA- ratings, or similar comparable risk measures as adopted and deemed appropriate by JEA from time to time
- **Establish growth initiatives** to drive values and efficiencies with respect to electric, water, sewer, natural gas and other utility services, systems and/or products

Community impact value

- Establish and maintain **open and transparent communication** with employee, customer and all our stakeholders
- Continue investment and leadership of **economic development within Jacksonville**
- Continue and drive **employment within the region**
- Foster an environment of **engaged employees** that treat JEA as owners
- Preserve the level of **financial contribution of JEA to the city**

Environmental Value

- Maintain **compliance with all regulations** and meet or exceed industry standards that impact the environment
- Establish and lead a **sustainability program** for the benefit of the region
- Set an example of **environmental stewardship**

SOURCE: JEA

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

We are now more focused than ever on developing a strategic plan for JEA

Internal stakeholder alignment (Board, SLT, appointed employees, Union)

Phase 1

Transition Stabilize JEA, develop strategic framework, guiding principles, dashboard, financial tools, hire CEO

Phase 2

We are here

Develop status quo/business as usual financial projections

Assess current state of JEA health and culture

Develop scenarios

Set metrics and targets for per-formance and health

Set perfor-mance and health ambition + aspir-ations for JEA

Phase 3

Develop strategic portfolio of Initiatives to meet targets for performan ce and health

Launch no-regrets strategic initiatives

Phase 4

Finalize executable plan with **no regrets** near-term actions and **options** for long-term path

Phase 5

Align JEA Stakeholders & Charter with long-term plan to maximize value:
1) Customer;
2) Financial;
3) Environ-mental; and
4) Community Impact

External stakeholder consultation and feedback (e.g. City of Jacksonville)


Supplem
Informat
appendi
JEA
JEA
JEA
PRESENTATION TOPIC GOES HERE
ENERGY SYSTEM – MARCH 2019

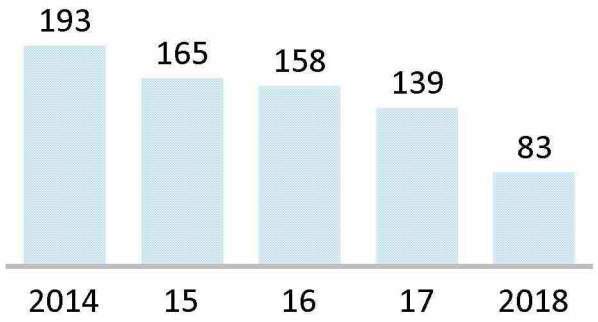
The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

JEA has been able to sustain income in recent years despite flat sales through active debt management

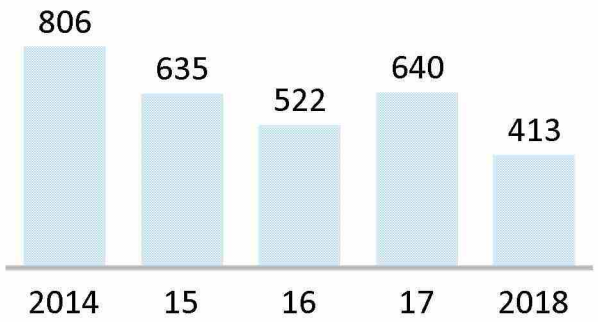
Increased costs and flat revenues

Free cash flow less capex, $M

Water



Energy



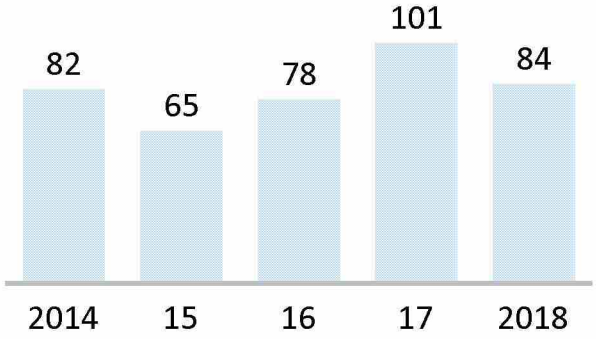
Active debt management

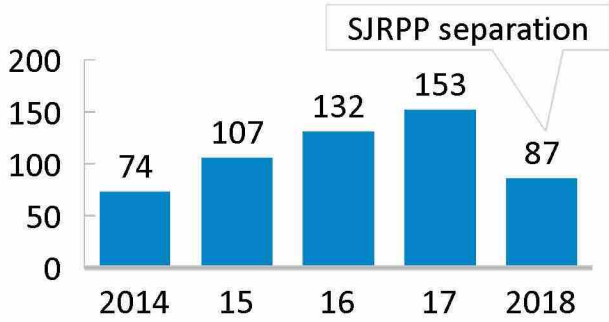
$260M debt service savings compared with 2011 schedule

$400M debt service savings compared with 2011 schedule

Stable income

Net income after contributions, $K





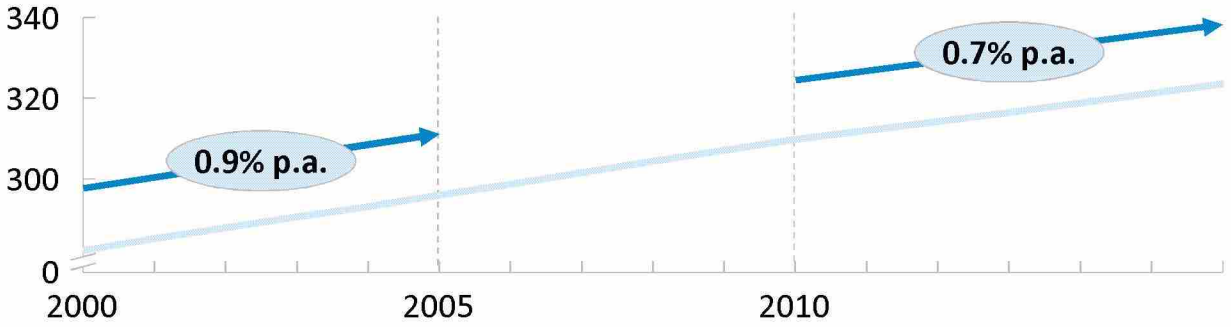
SOURCE: JEA

[Slide 20]

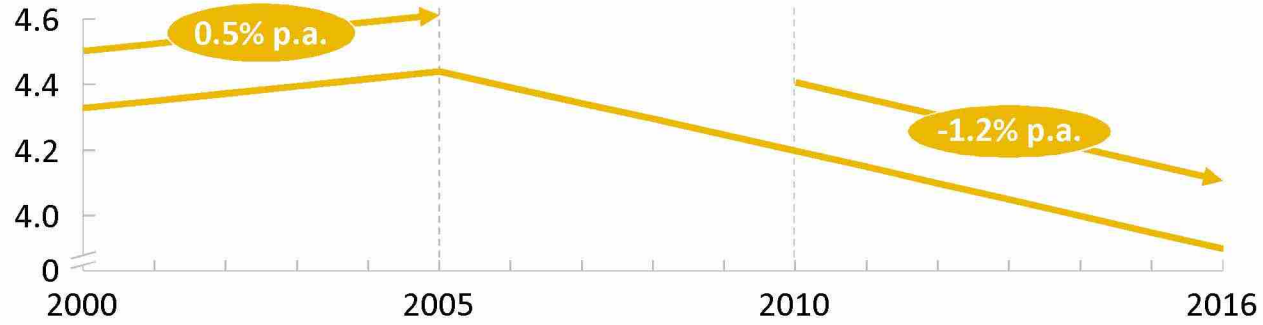
Mention that the forecast is not clear based on history

Water usage has declined nationwide as population has grown – this trend is expected to become more prevalent in Jacksonville

US Population, millions



National retail water sales volume,[1] billion gallons/day



Key drivers (have already impacted JEA)

- **Water efficiency:** residential efficiency increased **by over 20%,** driven by regulatory standards for appliances

Key drivers (less impact on JEA)

- **Sewer treatment:** systems have been expanded as septic tanks are removed, offsetting some efficiency losses
- **Increasing awareness:** drought and environmental awareness have led to regional reductions in customer use, particularly in the Western US (e.g., CA, AZ, NV)

1 Estimates available every 5 years

SOURCE: EIA, Energy Velocity, USGS

Projections are based on national and regional trends, tailored for JEA context

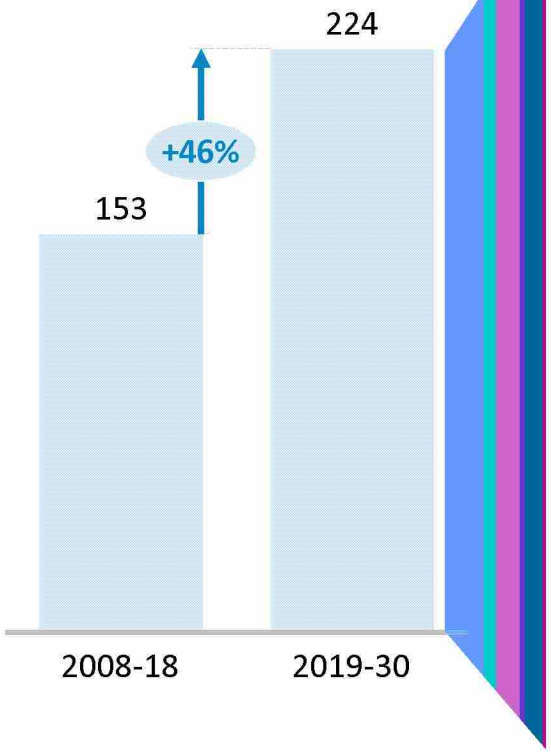
	Trends	2030 projections: National	2030 projections: JEA
Energy efficiency	▪ Increasingly efficient appliances reach higher penetration nationally as customers replace old units (10% since 2010) ▪ Jacksonville has exhibited similar energy efficiency trends	8-12%	11%
		Reduction in per-customer residential demand	
Distributed generation (solar)	▪ Total solar is forecasted to reach over 400 GW[1] by 2030 (over 30% of current total is distributed) ▪ Distributed solar currently lags in Florida due to poor economics, and is expected to pick up in mid-2020s	6.5x	34x
		Distributed solar growth	
Distributed generation (non-solar)	▪ CHP growth has been relatively flat in US following decades of policy-driven growth ▪ CHP adoption in Jacksonville has been non-existent despite ongoing conversations with most likely adopters	<1%	<1%
		Annual CHP growth	
Electric vehicles (EV)	▪ EVs are expected to grow from .2% of fleet today to 7-12% by 2030 ▪ Jacksonville EVs have grown at about half of the US average	7-12%	3-12%[3]
		Of vehicles	

1 Based on Sunshot 2030 for PV report 2 "EV" includes PHEV and BEV 3 Jacksonville vehicle penetration currently below US average; trend expected to continue barring external influence

SOURCE: EV automotive forecast, SEIA, EIA, Edison Foundation, IRENA, DOE

Water costs: system priorities will increase the capital investment needed to deliver service

Average annual water capex budget, $M



System priorities	Projected spend, 2019-30, $M
Supply challenges: Proactively address emerging supply challenges on South Grid	327
Reclaimed water: Lead Florida in increasing the use of reclaimed water in service territory	206
Population growth: Connect and serve new customers, accounting for potential continued reductions in use per customer	478
Maintenance and resiliency: Maintain condition of existing infrastructure; build for additional resiliency to outages and other system disruptions	996

SOURCE: JEA

Supplem
Informat
appendi

JEA

JEA

PRESENTATION TOPIC GOES HERE

ENERGY SYSTEM – MARCH 2019

The following "Baseline Conversation" financial projections are presented solely for JEA Board of Directors planning and action. They are not a projection of future financial performance and, as such, should not be relied upon by present or prospective JEA bond investors to purchase or sell any security or to make an investment decision. The projections are merely a mathematical representation of a hypothetical case for change. Actual results are likely to differ materially from this business case. Use of this presentation not in its entirety could result in material financial harm to the company.

Financial assumptions used to develop energy and water status quo baseline scenarios

Financial assumption	Energy	Water
Use rate increases to meet cash flow gap	YES	NO
Raise additional debt to meet cash flow gap	NO (with exception of debt funding for Greenland)	YES
Fund city contribution post 2023	NO	YES

Energy financial dashboard

Metric	2019	2025	2030	CAGR	Notes
Residential bill[1]	$123.34	$133.09	$142.88	1.3%	Current Florida median is $125
Operating free cash flow	$553,944,609	$385,810,140	$387,364,043	-3.2%	
Capital expenditures	($275,000,000)	($321,529,960)	($179,027,619)	-3.8%	2025 capex driven in part by Greenland
Funds available[2]	$278,944,609	$64,280,179	$208,336,424	-2.6%	
Debt[3]	$1,942,959	$1,857,004	$1,394,117	-3.0%	
Debt to capital ratio	60%	62%	57%	-0.5%	Current target is 50%

1 After taxes
2 For debt service and city contribution
3 Net funded

SOURCE: JEA

Water financial dashboard

Metric	2019	2025	2030	CAGR	Notes
Residential bill[1]	$70.45	$70.45	$70.45	0.0%	Current Florida median is $77
Operating free cash flow	$347,483,156	$330,707,226	$339,579,834	-0.2%	
Capital expenditures	($219,928,344)	($204,974,406)	($216,032,005)	-0.2%	Capex remains high through projection
Funds available[2]	$127,554,812	$125,732,820	$123,547,829	-0.3%	
Debt[3]	$1,216,806	$1,185,638	$922,200	-2.5%	
Debt to capital ratio	41%	35%	27%	-3.7%	

1 After taxes
2 For debt service and city contribution
3 Net funded

SOURCE: JEA