

2018 VALUE SUMMARY



The energy behind public power



POWER SUPPLY SERVICES

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Power Supply	Asset Sale Agreement	\$145,323,000	Asset Sale Savings under FR Rate is calculated by projecting costs under the AR Rate less the actual costs under the new FR rate.	Total projected AR Rate charges of \$762,980,000 less the total FR Rate charges of \$617,657,000. Total Savings = \$145,323,000
Power Supply	Hourly Trading Services	\$487,640	Staff outsourced NCPA1's hourly energy trading/scheduling functions rather than adding staff. The resultant annual savings are based on these factors: internal staff cost = 5 FTEs @ \$140,000/FTE + 20% carrying charges on infrastructure cost of \$225,000; outsourced cost = \$257,360.	Total Benefit = Internal cost - Outsourced cost = ((5 FTEs x \$140,000/FTE) + (0.2 x \$225,000)) - \$257,360 = \$487,640
Power Supply	Market Transactions Checkout	\$17,865	Staff identified billing errors during checkout and reconciliation of market transactions for NCPA1.	Total Benefit = Bill corrections identified and paid to NCPA1 = \$17,865
Power Supply	REPS Compliance	\$2,890,783	Successfully lobbied NCUC to postpone swine requirement by one year, allowing the Power Agencies to avoid retiring RECs for 2016 compliance. Additionally, due to successful lobbying, the poultry requirement has been delayed several times, leaving the 2016 state-wide aggregate poultry requirement to be 730,000 MWh less than what was originally stated in the statute.	2018 Benefit = Value of RECs that would have been retired in 2018 = swine RECs (in-state and out-of-state) + poultry RECs (in-state and out-of-state) + unpurchased RECs = \$780,731.10 + \$869,671.70 + 1,240,380 = \$2,890,783
Power Supply	REPS Compliance	\$156,078	Identified out of state sources for REC purchases to comply with the NC REPS law. These purchases are allowed by law and provided for significant savings to the Power Agencies	Total Benefit = NCEMPA general REC savings + NCPA1 general REC savings = \$91,623.95 + \$64,453.95 = \$156,077.90
Power Supply	REPS Compliance	\$1,080,000	Ensured compliance on behalf of all 51 Power Agency members and 3 non-Power Agency members. Utilize Electricities staff to provide REPS compliance services to Power Agency cities instead of having each city perform the function on their own.	Total Benefit = 54 cities x 10% FTE x 2000 FTE hours x \$100/hour = \$1,080,000
Power Supply	Supplemental Capacity and Energy	\$11,622,995	Staff renegotiated NCPA1's Interconnection Agreement (IA) with Duke to allow NCPA1 to purchase supplemental capacity and energy from the market rather than from Duke. The savings result from the difference between 2018's actual supplemental and reserves power supply cost versus what would have been paid to Duke under the old IA.	Total Benefit = Duke cost - market cost = \$64,793,957 - \$53,170,962 = \$11,622,995
Power Supply	Surplus Sales Program	\$34,000,000	Staff negotiated changes in NCPA1's Interconnection Agreement with Duke in order to sell NCPA1's surplus electricity directly into the wholesale markets rather than to Duke at lower prices. The value of the surplus energy program represents the additional margins gained through these sales.	Total Benefit = Sales revenue - Sales cost; Sales revenue = Energy price x Sales volume = \$31.54/MWh x 2,276,965 MWh = \$71.8M; Sales cost = Energy cost x Sales volume = \$16.60/MWh x 2,276,965 MWh = \$37.8M; Total Benefit = \$71.8M - \$37.8M = \$34,000,000
Power Supply	Transmission Losses	\$1,560,000	Staff has negotiated an agreement with Duke to reduce the Transmission Loss factor from 3% to 2.11%.	Total Benefit for 2018 = 12 months of savings = \$1,560,000
Power Supply	Transmission Losses Settlement	\$216,666	Staff Negotiated a reduction in Transmission Losses from 2.15% to 2.10%	Total Benefit = Lower FRPPA costs + Lower Transmission costs = \$216,666
Power Supply	Transmission Peak Reduction	\$1,471,320	NCPA1 dispatches Agency, city and customer owned generators at the time of Duke's transmission peak. The reduction in load provides a savings on NCPA1's transmission bill. The estimated amount of DG operated during the Transmission peaks multiplied by the avoided transmission service rate for 2018 yields the total benefit.	Total Benefit = 134MW of DG * 9 months during 2018 * \$1.22/kW avoided cost of Transmission service expense = \$1,471,320

SERVICES BENEFIT

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Business Development Services	C&I Power Audits	\$180,000	Staff performed energy audits for NCEMPA's C&I customers. 72 power audits were provided. If outsourced, energy audits cost \$2,500 each.	Total Benefit = (Number of energy audits x Outside audit cost) = 72 x \$2,500 = \$180,000
Business Development Services	ESP Projects	\$18,750	Revenues from 2018 Energy Solutions Partner projects.	Total Benefit = \$18,750
Business Development Services	Key Accounts Events	\$43,500	Hosted Key Accounts events for NCEMPA1 and NCEMPA members. 3 events were hosted in 2018	Total Benefit = Amount spent on events + Avoided member staff time for planning = \$12,000 + (\$10,500 x 3 events)= \$43,500
Business Development Services	Lighting Rebate Program	\$385,331	Provided lighting rebates to members and their customers. Total of 96 lighting projects were funded and \$385,331 rewarded in rebates.	Total Benefit = Total rebates provided = \$385,331
Business Development Services	Power Quality & Infrared Scanning Audits	\$32,000	Staff performed 4 Power Quality Audit and 0 Infrared Scanning Audit	"Total Benefit = (0 Infrared Study at an outside cost of \$2,000 + 4 Power Quality Study at an outside cost of \$8,000) = \$32,000"
Compliance	NERC Compliance	\$322,504	Staff provides NERC/SERC reliability compliance services for 7 cities in NCEMPA, and 1 non Power Agency city. It is estimated that each city would require 1.98 FTE (a combination of their own employees and consultants) to maintain compliance in order to avoid potential penalties of up to \$1,000,000 per occurrence per day.	Total FTEs = (0.2475 FTE/city) x (8 cities) = 1.98 FTEs. Assume 70% of FTEs are provided by city employees (1.39 FTE) at \$50/hour and 30% by consultants (0.59 FTE) at \$145/hour. Total Benefit = (1.98 FTE x \$50/hour x 2,080 hours/year) + (0.59 FTE x \$145/hour x 2,080 hours/year) = \$322,504
Corporate Learning & Development	Member Training	\$34,944	Curriculum review and redesign work for Safety & Training group - Basic Lineworker, Intermediate Lineworker, and Advanced Lineworker	Total Hours (12 Months): 672 Hrs. x \$52.00 (Industry average rate for curriculum design work). Total Benefit = \$34,944
Corporate Learning & Development	Training	\$1,476	ElectriCities provided two Communications courses (8 hours each) with 36 attendees. The industry average is \$300/per attendee and ElectriCities cost is \$259/per attendee. A cost differential of \$41.	Total Benefit = \$458 cost differential x 15 participating Members = \$1,476
Corporate Learning & Development	Training	\$6,870	ElectriCities provided a S.E.R.V.I.C.E. Focused Leadership course over 2 days with 15 attendees. The industry average is \$907/per attendee and ElectriCities cost is \$449/per attendee. A cost differential of \$458.	Total Benefit = \$458 cost differential x 15 participating Members = \$6,870
Corporate Learning & Development	Training	\$2,782	ElectriCities provided a Crew Leader course over 2 days with 13 attendees. The industry average is \$687/per attendee and ElectriCities cost is \$473/per attendee. A cost differential of \$214.	Total Benefit = \$214 cost differential x 13 participating Members = \$2,782
Corporate Records	Video Library	\$22,610	Staff maintains a library for member use of 323 videos/DVDs pertaining to various business practices and safety titles. The average cost of a video is \$350 and 35 loans/year are made to members at no charge.	Total Benefit = Number of videos x Annual carrying cost x Video cost= 323 x 0.20 x \$350 = \$22,610
Distribution Services	CADD Drawings	\$146	Staff pays for customized CADD drawings to support the Construction Manual at a cost of about \$564/year. There is no additional cost to the members and the work product is shared among all members.	Total Benefit = Avoided cost of CADD drawings = \$146
Distribution Services	Distribution Services	\$39,683	Staff provides distribution services to members. Some of these services include subscriptions to APPA's eReliability Tracker outage tracking system to members at no charge, system losses studies, reliability tracking and assistance, SDS online system, etc.	Total Benefit = (Number of Cities x Cost per Subscription) + (Number of Cities x Avoided Cost per SDS Account) + (Number of Cities x Avoided assistance time for reliability x Labor rate) = (17 x \$99) + (6 x \$2,000) + (65 x 4 hr x \$100/hr) = \$39,683

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Distribution Services	EIA Report Assistance	\$44,000	Staff coordinates data collection and city reports for filing with EIA for Non-PA Participants at no additional charge. It is estimated that a vendor would charge \$2,750/city/year.	Total Benefit = Number of cities x Savings/city = 16 x \$2,750 = \$44,000
Distribution Services	Electric System Construction Manual	\$90,000	Standardized Construction Practices allow for training programs to teach the same practices to all members. This shortens the learning curve, allows for better emergency response and assures acceptable practices are taught. Construction drawings developed and approved by Public Power employees allow for standardized training and construction practices. Staff provided manuals at no additional cost to members, where members would otherwise have to hire a consultant.	Total Benefit = Consultant cost per member x Number of members = \$1,000 x 90 = \$90,000
Distribution Services	Joint Purchasing - Utility Poles	\$18,909	Staff coordinated the joint purchasing of utility poles, resulting in a 3% discount on \$630,295 of pole purchases.	Total Benefit = EC discount x Pole expenses = 3% x \$630,295 = \$18,909
Distribution Services	Performance Indicators	\$52,000	Staff researched and compiled a report of industry Performance Indicators and trends for the members, resulting in savings to the members due to avoided use of member staff resources.	Total Benefit = Avoided city effort x City rate x Number of cities = 8 hr x \$100/hr x 65 = \$52,000
Distribution Services	Pole Attachments	\$65,000	Staff worked to develop a template pole attachment agreement available for all members to use. It is estimated that a consultant would charge \$1,000 to each member for a similar agreement.	Total Benefit = Avoided consultant cost x Number of cities = \$1,000 x 65 = \$65,000
Distribution Services	Reliable Public Power Provider (RP3)	\$38,400	Staff provides data needed for RP3 applications as well as assistance with completing the applications, resulting in a reduction in member staff time to complete the applications.	Total Benefit = Avoided assistance time x Labor rate x Number of members = 16 hr x \$100/hr x 24 = \$38,400
Distribution Services	State Wide Service Contracts	\$40,000	Contracts are in place with vendors to provide technical assistance or services to members. The use of Staff to put together a service contract, bid and execute an agreement avoids paying a contractor or consultant.	Total Benefit = Avoided vendor cost/use x Number of uses = \$500 x 80 = \$40,000
Distribution Services	System Betterment Funding	\$255,000	The Power Agencies provided \$5,000 in funding to all 51 members to spend on a system betterment project.	Total Benefit = \$5,000 x 51 members used their funding = \$255,000
Distribution Services	Utility Director Meetings & Listserve	\$45,000	Staff provides peer networking for utility directors; asking and answering questions instead of paying consultants or contractors for assistance. It is estimated each member avoids at least \$500 per year in consulting costs.	Total Benefit = Avoided consulting cost x Number of members = \$500 x 90 = \$45,000
Economic Development	Advertising	\$2,448,000	Staff provides advertising services to all 51 members using "12 x" rates to get the best value. For the major magazines - Site Selection, Area Development, Business Facilities, Southern Business & Development and targeted market sectors publications, the average cost of an ad is \$6,000 with 2 ads provided per city per quarter	Total Benefit = Number of cities x (Cost per ad x Adds per year)= 51 x (\$6,000 x 8)= \$2,448,000
Economic Development	All America City(s)	\$12,000	Staff provides specific designs and layouts for an average of 3 booth exhibits/year.	Total Benefit = Booth development cost x Number of booths = \$4,000 x 3 = \$12,000
Economic Development	Business Recruitment	\$1,275,000	Staff used ESRI ArcGIS software to provide market analyses and up to 18 different reports for business recruitment process at no direct cost to members.	Total Benefit = Number of cities x Avoided cost per analysis = 51 x \$25,000 = \$1,275,000
Economic Development	Client Leads	\$408,000	Staff pursues an average of over 200 inquiries/leads regarding new business opportunities in North Carolina each year. These come from trade shows, advertising, mission trips with Regional Partnerships, County EDCs and the Dept. of Commerce. Targeted listing includes company names, addresses, CEOs/owner/email/phone. It is assumed that members would otherwise purchase 1 list per quarter at \$2,000 each.	Total Benefit = Number of cities x Cost per quarterly listing x 4 quarters/year = 51 x \$2,000 x 4 = \$408,000

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Economic Development	Customized City Projects	\$90,000	Staff provides customized projects for members - i.e., website design, bill board design and collateral marketing (target sectors, demographics, pocket folders, etc.). It is estimated that each city would need to spend \$6,000/project to obtain such service from a third party.	Total Benefit = Number of cities x (Cost per project) = 15 x \$6,000 = \$90,000
Economic Development	Economic Development Staff	\$750,000	Staff includes a person with applicable skills to manage economic development activities for 30 members. Otherwise, each city would need at least 0.50 FTE at \$50,000/FTE to provide this service. (Note: Monroe and High Point have ED staff)	Total Benefit = Number of cities x (City FTE x Cost per FTE) = 30 x (0.5 x \$50,000) = \$750,000
Economic Development	Marketing	\$306,000	Staff provides cities with specific designs/layouts for marketing collateral to attract new businesses at an average cost of \$3,000 to \$10,000 depending on the collateral piece. If a third party were hired to provide this service, it is estimated that each piece would cost \$6,000 and it is assumed that each city would purchase one piece per year.	Total Benefit = Number of cities x (Cost per project) = 51 x \$6,000 = \$306,000
Economic Development	Retail / Commercial Development	\$4,335,000	Proposals were made by Staff to retail/commercial establishments for recruitment purposes. Without such support, each city would pay for consultant reports of around \$60,000 each and would need 0.50 FTE to manage the retail recruitment process.	Total Benefit = Number of cities x ((Consulting cost) + (City staff FTE x City staff cost)) = 51 x ((\$60,000 + (.5 x \$50,000))) = \$4,335,000
Economic Development	Retail Strategies Program	\$120,000	Program to develop retail strategic plans for six (6) communities at a savings of \$20,000 for each community.	Total Benefit = Number of cities x savings per city = \$20,000 x 6 = \$120,000
Economic Development	Retail Strategies Program	\$75,000	Program to help with years 2nd and 3 of the retail recruitment program for six (6) communities at a savings of \$12,500 for each community.	Total Benefit = Number of cities x savings per city = \$12,500 x 6 = \$75,000
Economic Development	Retail Strategies Program	\$20,000	Retail Academy program provide assistance to communities with populations under 10,000. The assistance program helped four (4) communities at a savings of \$5,000 for each community.	Total Benefit = Number of cities x savings per city = \$5,000 x 4 = \$20,000
Economic Development	Smart Communities Matching Grants	\$125,000	Staff assisted with providing \$5,000 matching grants for 25 cities.	Total Benefit = Number of grants x (Matching grant amount) = 25 x \$5,000 = \$125,000
Economic Development	Smart Sites / Shovel Ready Program	\$150,000	Shovel-ready suite qualification program designed to support economic development opportunities for the members.	Total Benefit = Number of cities x (cost) = 6 x \$25,000 = \$150,000
Economic Development	Target Marketing Plans	\$344,000	Staff provides strategic economic development plans for the members at no additional charge versus each city paying an average cost of \$20,000/plan and implementation costs of 12 work days for each member @ \$1,200/work day.	Total Benefit = Number of cities x (Cost of plan + (Number of work days x Cost per work day)) = 10 x (\$20,000 + (12 x \$1,200)) = \$344,000
Economic Development	Territorial Assistance	\$153,000	Staff provides legal assistance and guidance for the members regarding territorial and customer choice issues. It is estimated that the number of questions answered per year is the equivalent of one per member and that the cost of such assistance by outside counsel is \$3,000 for each question.	Total Benefit = Number of cities x (Cost per city) = 51 x \$3,000 = \$153,000
Economic Development	Webinars	\$15,300	Staff provides webinars for the members on retail / commercial / industrial development including IECC / SEDC webinars.	Total Benefit = Number of cities x 1 webinar per city x cost per project = 51 x 1 x \$300 = \$15,300
HR	Salary Data	\$1,059,367	ElectriCities provides electric position salary data from various survey sources. Purchased surveys for 2018 included: APPA - \$2,370; EAPDIS - \$1,900; Willis Towers Watson - \$5,500; Economic Research Institute Salary Assessor - \$2,133	Total Benefit = (\$2,370 + \$1,900 + \$5,500 + \$2,133) = 11,903 11,903 x 89 Members = \$1,059,367

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Legal	Government Relations	\$54,057,317	The ElectriCities Government Relations staff protects the interests of all NC Public Power communities at the NC General Assembly including municipalities ability to grow their electric load and charge reasonable fees for use of their infrastructure. Staff also mitigates the harm of potentially costly mandates such as renewable energy and recent changes to how sales of electricity are taxed.	\$54,057,317.08 represents the total distribution amount public power cities and towns received from the NC Department of Revenue for the Electric Franchise/Natural Gas Excise tax for the 2015-2016 fiscal year that ended on June 30, 2016. Under tax reform legislation passed in the 2013 General Assembly, effective on July 1, 2014, the gross receipts franchise tax on sales of electricity and the reimbursement of a portion of that tax to cities was repealed. However, cities that were served by investor owned utilities were protected by a "hold harmless" provision in the law that provided that those cities would receive the same amount of money despite the repeal of the gross receipts franchise tax. Power Agency cities were initially left out of the "hold harmless" provision. Staff and our contract lobbyists successfully lobbied legislators and legislative staff on behalf of the Power Agency cities so that Power Agency cities are also protected by the "hold harmless" provision. Value held constant since 2015.
Member Communications	City Rebrand	\$10,878	Selma Logo Development: Multiple designs presented; Multiple rounds of revisions; Final artwork provided in various formats	Total Benefit = Contractor design services (\$3,377.50) + Estimated ElectriCities staff (75/hrs @ \$100 = \$7500) = \$10,877.50
Member Communications	Public Power Week Campaign	\$31,277	Staff designed a Public Power Week themed campaign, and produced themed promotional products that could be ordered and paid for by members.	Total Benefit = 35 Cities ordered product. Cost of items purchased by members to promote Public Power Week = \$31,276.60
Member Communications	Stock Bill Inserts	\$67,808	Fourteen bill inserts on public power-related topics were made available to all members free of charge.	Total Benefit = 339,040 bill inserts sent to members x \$0.20 per insert = \$67,808
Member Communications	Videos (Energy Efficiency, Value of Public Power Other Topics)	\$1,270,000	Staff has developed 70 videos pertaining to various business practices for use by members. It is expected that half of the 72 members use all of the videos. Also created customized Value of Public Power videos for 20 communities.	Total Benefit = (70 videos x \$500 per video x 36 members = \$1,260,000) + (Customized Value of Public Power Video = 20 videos x \$500 per video = \$10,000) = \$1,270,000
Member Infrastructure Support	Customer Information System	\$7,000	Annual CIS software maintenance savings from consolidation of licensing	Total Benefit = (Savings of 4% x \$29,000 per member license fee) x (6 members) = \$7,000
Member Infrastructure Support	Data Center	\$6,808	3Yr. Negotiated Cisco Smartnet coverage (vs. historically annual coverage) Savings of \$20,424 over 3 yrs. (i.e. 1 yr. was \$50,873.... 3yr contract is now \$44,065 per Yr. for 3 Yrs.)	Total Benefit = (\$50,873 - \$44,065) = \$6,808
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$143,000	Design and management of a high availability production environment for the hosted applications and a test environment. Services include network and system administration, database administration, security, data storage, web services, VPN connections and desktop/peripheral support.	Total Benefit = 1430 hours of services provided annually x Estimated average sr. system administrator contract rate of \$100/ hour = \$143,000
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$122,500	Staff provides Tier 1 and 2 application support for hosted NorthStar CIS members, being the first call for user CIS issues, responding to questions, investigating problems & working with the vendor to resolve the most complex application issues.	Total Benefit = 1225 hours of services * \$100/ hour = \$122,500

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Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$87,500	Staff recommends industry best practices and process improvements for back office operations e.g., CIS software utilization, customer service policies and procedures, third party software integration and workflow automation.	Total Benefit = 700 hours of services provided annually x Estimated average contract services rate of \$125/ hour = \$87,500
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$100,000	Staff provides professional services including project management, vendor management, technical support, implementation assistance , QA testing, training and more for new system implementations, upgrades, enhancements, add on products and integration.	Total Benefit = 800 hours of services provided annually x Estimated average contract services rate of \$125/ hour = \$100,000
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$48,000	Staff provide user training and education for Member Customer Service, Finance, IT and operations staff on CIS/Billing/Financial applications, offering new staff training, webinars, user group meetings and vendor conferences.	Total Benefit = 400 support hours provided annually x Estimated average contract services rate of \$120/ hour = \$48,000
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$37,000	Staff provides report writing services, including requirements definition, development and quality assurance for adhoc and other custom reporting needs. Staff provides data and report writing services to assist with submission of EIA and Member Participation Reporting.	Total Benefit = 370 hours of services * \$100/ hour = \$37,000
Member Infrastructure Support	Hosted Customer Information/Billing and Financial Systems	\$25,000	Staff provides utility software research and evaluation consultation, vetting product functionality, technical design and integration capabilities aiding members in product comparison and selection for those seeking to acquire CIS, Financial and other utility applications.	Total Benefit = 200 hours of services * \$125/ hour = \$25,000
Member Infrastructure Support	Surplus Sales/SETH Support	\$1,167,360	Approximately 16 hours per month are required to support NCMPA1's energy trading system, or 16*12 months = 172 hours at an average rate of \$55/hr. If a third party were to use comparable energy trading software like IB WebTrader to provide power trading services, it would cost each city \$6,000/month or \$72,000/year.	Total Benefit = (((\$6,000/month - (16hours/month x \$55/hr)) * (12 months) x 19 cities = \$1,167,360
Residential Energy Services	Apogee's Weather Insights	\$44,500	By negotiating a statewide license agreement for this online energy auditing tool, Staff was able to provide the tool at an annual license cost of \$30,000 versus having each of 30 cities pay \$6,500 and avoid \$10,000 maintenance cost.	Total Benefit = (Number of cities x Cost/ city) - Group cost-maintenance cost = (13 x \$6,500) - \$30,000 - \$10,000 = \$44,500
Residential Energy Services	Energy Audit App	\$42,000	Negotiated a license agreement for any/all members to use an energy audit app to conduct energy audits. Three members use the app and were able to avoid the development costs and EC's annual license fee. Future benefit calculations will not include development costs.	Total Benefit = (development cost + annual EC license cost) - (annual license fee charged to member) x (number of members using app) = (\$30,000 + \$18,000) - (\$2,000 x 3) = \$48,000 - \$6,000 = \$42,000
Residential Energy Services	Energy Forecast online Energy Audit/ Information	\$109,000	Contract with vendor allows NC members to use the service under ElectriCities umbrella	Total Benefit = (# of members using the service x \$7,500 cost if members had to purchase it separately) - (cost of ElectriCities contract) = \$157,500 - \$48,500 = \$109,000
Residential Energy Services	Energy Kits	\$20,328	Renegotiation of energy kit contract price reduced cost from \$19 to \$13 per kit	Total Benefit = 3,388 kits distributed at \$6/ kit (3,388 x \$6) = \$20,328
Residential Energy Services	Residential Energy Audits	\$138,750	Staff performed 370 energy audits for Power Agency Participants' residential customers in 2018. Market rate of an audit is \$375/audit.	Total Benefit = Number of audits x Outside audit cost = 370 x \$375 = \$138,750
Safety & Training	Accident Investigations	\$16,000	If an independent consultant conducted an accident investigation, it would cost \$200 per hour for 80 hours. Staff investigates accidents at no additional charge.	Total Benefit = Cost of investigations (assuming one/year) = (80 hr x \$200/hr) = \$16,000

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Safety & Training	Apprenticeship Training Program	\$781,200	Staff has a new Lineman Career Development Apprenticeship Program to provide city electric employees training at a cost of \$1,600 per student compared to the market price of \$14,000. Currently there are 252 students enrolled in the program and the program has 4 level and it usually takes 4 years to complete.	Total Benefit = Market price of program - EC cost of program = \$14,000 - \$1,600 = \$12,400/4 = \$3,100 x 252 = \$781,200
Safety & Training	Lineworker Audits	\$23,400	If an independent consultant were to conduct 39 field audits of member cities' line workers, it would cost \$150 for about 4 hours per audit. This service is provided at no extra charge to member cities.	Total Benefit = (Time per audit x Consultant rate) x Number of audits = (4 hr. x \$150/hr.) x 39 audits = \$23,400
Safety & Training	Meter Technician Career Development Program	\$29,790	If vendors maintained and administered the Meter Technician Career Development Program, the cost would be approximately \$150 per hour for a 40 hour week of instruction for a total of \$6000. Member cities instructors administer the entire program at a cost of \$1035. A savings of \$4,965.	Total Benefit = Savings per class x Number of classes= (\$6,000 - \$1035) x 6 = \$29,790
Safety & Training	OSHA 300 Logs	\$6,000	Staff tracks and compiles members' Annual OSHA 300 Logs at no additional charge to the members. If the members were to hire a consultant to perform this service, it would cost approximately \$150 per hour for a total of 40 hours.	Total Benefit = Consulting time x Consultant rate = 40 hr x \$150/hr = \$6,000
Safety & Training	OSHA Participation	\$175,000	Staff participates in OSHA committees as a voting member and keeps the members informed of changes in the workplace involving tools and protective equipment for lineworkers at no additional charge. If a consultant were to provide this service, it would cost approximately \$2,500 for each of the 70 members.	Total Benefit = Consulting cost x Number of cities= \$2,500 x 70 = \$175,000
Safety & Training	Safe Operating Practices	\$672,000	Safety and training services provided by Staff resulted in a Lost Work-day rate of 1.09% for member cities versus the APPA average of 4.75%. This represents 16 lost work day accidents at an average industry cost of \$42,000/accident.	Total Benefit = Lost work day accidents x Cost/accident = 16 x \$42,000 = \$672,000
Safety & Training	Safety Awards	\$7,200	If a consultant were to provide "No Lost Work Day Safety Award" meeting presentations to electric workers and management, the average cost would be approximately \$150 per hour for 48 cities. Staff provides this service at no additional cost to the members.	Total Benefit = (Consulting time x Consultant rate) x Number of cities = (1 hr x \$150/hr) x 48 = \$7,200
Safety & Training	Safety Guidelines Manual	\$175,000	Staff has found it more cost-effective to monitor regulations affecting the electric industry and report to each of our members on an annual basis at no additional charge. If the members were to do this individually, the cost would be \$2,500 for each of the 70 members.	Total Benefit = Consulting cost x Number of cities = \$2,500 x 70= \$175,000
Safety & Training	Safety Investigations	\$175,000	Staff has found it to be more cost-effective to monitor OSHA regulations and accident/near-miss investigations on behalf of our members and report to each of our members on an annual basis at no additional charge. If the members were to do this individually, the cost would be \$2,500 for each of the 70 members.	Total Benefit = Consulting cost x Number of cities = \$2,500 x 70 = \$175,000
Safety & Training	Safety Meetings	\$8,700	If a consultant were to provide instruction and/or material for members' safety meetings. They require approximately one hour each for 58 meetings @ \$150/hour. Staff conducts the meetings and at their work location at no additional cost to the members.	Total Benefit = (Time per meeting x Consultant rate) x Number of meetings = (1 hr x \$150/hr) x 58 = \$8,700
Safety & Training	Substation Career Development	\$25,000	If vendors administered the Substation Career Development apprenticeship program to 25 electric department employees, it would cost approximately \$2,400 each for a total of \$60,000. Member cities instructors administer the ElectriCities apprenticeship program at \$1,400 each for a total of \$35,000.	Total Benefit = Savings per student x Number of students = (\$2,400 - \$1,400) x 25 = \$25,000

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Safety & Training	Underground Career Development	\$25,000	If vendors were used to administer the Underground Career Development apprenticeship program to 26 electric department students, the cost would be approximately \$2,400 each. Member cities instructors administer the ElectriCities apprenticeship program at a cost of \$1,400 each.	Total Benefit = Savings per student x Number of students = (\$2,400 - \$1,400) x 25 = \$25,000
Technology Services	Electric Utility Assessment	\$80,000	ElectriCities created and administered the 2018 Electric Utility Assessment. 40 member utilities participated in this assessment and received their results and benchmarks.	Total Benefit = Estimated market value x Number of cities assisted = \$2,000 x 40 = \$80,000
Technology Services	Emerging Technologies	\$37,000	ElectriCities assisted members with projects related to emerging technologies in 2018. This includes a smart thermostat pilot, drone services, data analytics, and more.	Total Benefit = (Avoided cost for free Smart Thermostat Pilot x Number of Members participating) + (Avoided cost of drone service x Number of Members participated) + (Avoided cost of data analytics x Number of Members participated) = (\$5,000 x 5) + (\$2,000 x 3) + (\$2,000 x 3) = \$37,000
Technology Services	Hometown Connections	\$9,186	Commissions earned from members purchasing products from Hometown Connections partners. The total commissions earned in 2018 were \$9,186.03	Total Benefit = Total 2018 commissions earned = \$9,186.03
Technology Services	Hosting Benefit	\$72,000	ElectriCities members receive discounted hosting for Nexgrid AMI projects and full deployments and CIS/ERP systems compared to market value.	Total Benefit = Estimated discount vs. market value x number of member systems hosted = \$300/month*12months * 20 members = \$72,000
Technology Services	Retail Customer Survey	\$82,000	ElectriCities organized a Retail Customer survey for members in 2018. Members participated at no additional cost.	Total Benefit = Cost to administer survey = \$82,000
Technology Services	Smart Grid - Business Cases	\$14,000	ElectriCities assisted 7 members with the analysis of smart grid business cases, thereby avoiding consultant fees estimated to be \$2,000/member.	Total Benefit = Avoided consultant cost x Number of cities assisted = \$2,000 x 7 = \$14,000
Technology Services	Smart Grid - EC Discount	\$309,095	ElectriCities members receive 5% off Nexgrid products through ElectriCities MSA.	Total Benefit = Total spent on Nexgrid products in 2018 x 5% = \$309,094.78
Technology Services	Smart Grid - Member LM-Only Shared License	\$72,000	ElectriCities negotiated with Nexgrid to allow our Members to share a server if they are implementing load management only projects. This saves the Members on license costs.	Total Benefit = Avoided license costs x Number of Members on shared license = \$18,000 x 4 = \$72,000
Technology Services	Smart Grid - Project Management and Coordination	\$136,000	ElectriCities has been involved in 17 smart grid projects amongst our members. ElectriCities being involved helps ensure expectations are met, issues are resolved, etc., reducing the risk associated with these projects for our members.	Total Benefit = Avoided member staff hours x Labor rate x Number of members with smart grid projects = 80 hr x \$100/hr x 17 = \$136,000
Technology Services	Smart Grid - RFP Benefits	\$80,000	Assisted members with the evaluation of Smart Grid options: Issued Smart Grid RFP, evaluated vendors, and provided assistance, guidance, and analyses to members. This benefits the 4 members who began new SG projects/pilots in 2018.	Total Benefit = (Avoided assistance time x Labor rate x Number of members assisted) = 200 hr x \$100/hr x 4 = \$80,000
Technology Services	Strategic Technology Roadmap	\$75,000	ElectriCities worked to create a Strategic Technology Roadmap in 2017 to guide technology solution offerings. Information in this roadmap can be applied to members looking to create a similar guiding document. This information is reviewed and updated annually.	Total Benefit = Market value of a similar guiding document = \$75,000
Technology Services	Utility Billing & Financials - EC Discount	\$42,542	ElectriCities members receive 15% off licensing costs for Tyler Technologies Incode solutions.	Total Benefit = Total spent on Tyler Technologies licensing costs x 15% = \$42,542

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Technology Services	Utility Billing & Financials - Evaluation Process	\$60,000	ElectriCities organized various quotes, demos, provided analysis, reference checks, etc. on multiple utility billing and financial system solutions. This saved the members interested in upgrading their CIS or FINS a lot of time investigating solutions. 3 new members participated in this process in 2018.	Total Benefit = (Avoided assistance time x Labor rate x Number of members assisted) = 200 hr x \$100/hr x 3 = \$60,000
Technology Services	Utility Billing & Financials - PM and Coordination	\$56,000	ElectriCities has been involved in 7 Tyler Tech projects amongst our members. ElectriCities being involved helps ensure expectations are met, issues are resolved, etc., reducing the risk associated with these projects for our members.	Total Benefit = Avoided member staff hours x Labor rate x Number of members with projects = 80 hr x \$100/hr x 7 = \$56,000
Utility Business Services	Billing System Audits	\$30,000	Staff performs an audit of a municipal's billing system to identify potential errors and make recommendations to improve accuracy and/or processes. This also helps prior to billing system or AMI deployments to ensure bad data is not carried into a new system.	Total Benefit = (Cost of audit plus benefit of audit) x number of audits = (\$5,000 + \$5,000) x 3 = \$30,000
Utility Business Services	Customer Service Best Practices	\$45,000	Staff provides peer networking to improve members' policies, procedures and legal compliance and to reduce research and legal costs. Direct savings due to lower cost for developing and maintaining appropriate procedures is at least \$500 per member per year.	Total Benefit = Avoided consulting cost x Number of members = \$500 x 90 = \$45,000
Utility Business Services	Customer Service Policy Guidelines Manual	\$42,000	Staff provides cities with a manual of suggested policies. This allows the members to avoid using member staff resources to develop their own policies, resulting in significant savings for the members.	Total Benefit = City labor reduction x City labor rate x Number of members = 10 hr x \$60/hr x 70 = \$42,000
Utility Business Services	Economic Benefit Study	\$7,000	Staff works with member utility to identify the economic benefit that ownership of their electric distribution system provides to the municipality	Total Benefit = (market cost of report - EC cost of report) x number of reports = (\$15,000 - \$8,000) x 1 = \$7,000
Utility Business Services	ElectriCities Annual Meeting	\$156,240	The annual meeting hosted by Staff provides training, peer networking, legislative clout and opportunities to discuss utility business in an efficient manner. The registration fees are typically about \$195/person less than the industry standard (e.g., APPA). The number of applicable attendees in 2018 was 168.	Total Benefit = (Individual APPA fee - Group fee) x Attendees + Sponsorship Revenues = (\$775 - \$595) x 168 attendees + \$126,000 = \$156,240
Utility Business Services	Legal Support	\$20,000	Staff provided assistance with members' questions about legal issues, resulting in savings versus using external legal counsel.	Total Benefit = Estimated legal consulting time x External legal rate x Members assisted = 2 hr x \$250/hr x 40 = \$20,000
Utility Business Services	Training Classes for Member Staff	\$10,300	Staff provides training through webinars and workshops for customer service, marketing and technical/regulatory compliance. The estimated difference between market price (or outsourced city cost) of this service and the cost charged to the cities by Staff is \$100/person. There were 103 attendees logged in 2018.	Total Benefit = (Estimated savings for EC training/attendee) x Number of attendees = \$100/person x 103 attendees = \$10,300
Utility Services	Catawba Site Representation Services	\$83,913	Staff provides contract administration services to PMPA and NCEMC as they relate to their Catawba ownership interest. Staff bills PMPA and NCEMC for these services, reducing NCMPA1's cost of contract administration by sharing these services with the other Catawba Owners.	Total Benefit for 2018 = sum of PMPA + NCEMC invoices from NCMPA1 = \$83,913
Utility Services	Economic Development Rates / Retail Rate Assistance	\$90,000	As NCMPA1 Members receive inquiries regarding economic development opportunities, Staff collects customer data and works with the Participant to develop economic development rates to provide the prospective customer. Staff develops and performs rate analysis for NCEMPA Members, including identifying and recommending changes in billing structures. Without such assistance, each Member that receives the service would need a consultant to perform analysis at an estimated cost of \$2,500 per study. Thirty Six analyses were completed in 2018.	Total Benefit = Number of studies x External study cost = 36 x \$2,500/study = \$90,000

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Utility Services	Economic Development Rates/ Retail Rate Assistance	\$35,000	As NCEMPA Members receive inquiries regarding economic development opportunities, Staff collects customer data and works with the Participant to develop economic development rates to provide the prospective customer. Staff develops and performs rate analysis for NCEMPA Members, including identifying and recommending changes in billing structures. Without such assistance, each Member that receives the service would need a consultant to perform analysis at an estimated cost of \$2,500 per study. Fourteen analysis were completed in 2018.	Total Benefit = Number of studies x External study cost = 14 x \$2,500/study = \$35,000
Utility Services	EIA Report Assistance	\$52,250	Staff assisted each NCEMPA1 Participant with gathering data and filling out forms for the annual EIA report. Each city would otherwise need at least 0.05 FTE to gather and ensure accuracy of the data. This helps to avoid possible non-compliance penalties of up to \$2,750 per day.	Total Benefit = Number of cities x City FTE usage x City FTE cost = 19 x 0.05 x \$55,000 = \$52,250 or Total Benefit = Number of cities x Savings/city = 19 x \$2,750 = \$52,250
Utility Services	EIA Report Assistance	\$88,000	Staff coordinates data collection and city reports for filing with EIA for NCEMPA Members at no additional charge. It is estimated that a vendor would charge \$2,750/city/year.	Total Benefit = Number of cities x Savings/city = 32 x \$2,750 = \$88,000
Utility Services	Operational Expertise	\$440,000	Staff provides NCEMPA Participants with operations expertise and assistance in areas of common interest such as NERC compliance coordination, EPA related to generators, delivery point facilities and other operational issues with Duke. It is estimated that it would cost each city about 0.25 FTE in staff to provide equivalent services.	Total Benefit = Number of cities x City FTE usage x City FTE cost = 32 x 25% x \$55,000 = \$440,000
Utility Services	Retail Billing Program	\$420,000	Staff provides billing services for 319 of NCEMPA's retail customers in 24 cities, resulting in savings of \$17,500/city/year versus estimates of what the cities would have paid if such services were outsourced.	Total Benefit = Number of cities x Savings/city = 24 x \$17,500 = \$420,000
Utility Services	Retail Billing Services	\$262,500	Staff provides billing and data management services to NCEMPA1 Participants whose billing systems and/or staff resources for certain types of retail C/I customers are limited. Without Staff support, each city would spend about \$17,500 per year on such services.	Total Benefit = Number of cities using EC service x External service cost = 15 cities x \$17,500/city = \$262,500
Utility Services	Retail Rate Studies	\$170,000	Staff develops and performs retail rate studies for NCEMPA1 Participants, including identifying and recommending necessary and efficient changes in retail rate levels and billing structures. Without Staff assistance, each Participant that receives the service would need a consultant to do analysis and data manipulation at \$10,000 per study. Seventeen Participants used the service.	Total Benefit = Number of studies x External study cost = 17 x \$10,000/study = \$170,000
Utility Services	Retail Rate Studies	\$100,000	Staff develops and performs retail rate studies for NCEMPA Members, including identifying and recommending necessary and efficient changes in retail rate levels and billing structures. Without Staff assistance, each Participant that receives the service would need a consultant to do analysis and data manipulation at \$10,000 per study. Ten Members used the service.	Total Benefit = Number of studies x External study cost = 10 x \$10,000/study = \$100,000

FINANCE BENEFIT

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Finance	Bond Refunding	\$16,106,450	In 2012, Staff refunded Series 2003A bonds for NCMPA1 and replaced them with lower cost bonds. This provides significant reductions in financing costs for the Agency every year through 2032.	Total Benefit = Reduced financing costs in 2018 = \$16,106,450
Finance	Bond Refunding	\$325,058	In 2016, Staff refunded Series 2009 bonds for NCMPA1 and replaced them with lower cost bonds. This provides significant reductions in financing costs for the Agency every year through 2030.	Total Benefit = Reduced financing costs in 2018 = \$325,058
Finance	Bond Refunding/ Restructuring	\$78,014,101	In 2015, Staff refunded and restructured various NCMPA1 bonds. This provides significant reductions in financing costs for the Agency from 2015 through 2019, but increasing costs in later years.	Total Benefit = Reduced financing costs in 2018 = \$78,014,101
Finance	Capital Additions	\$517,000	In 2009, Staff secured the ability to finance \$68,650,000 of capital additions for NCMPA1 using Build America Bonds instead of traditional financing. In 2014, \$3,125,000 of bonds were repurchased leaving \$65,525,000 outstanding. After the repurchase, this results in savings of \$517,000/year during the life of the bonds.	Total Benefit = \$517,000
Finance	Interest on Margin Account	\$18,634	In 2018, Staff worked with ADM to begin earning interest on the margin account for Surplus Sales	Total Benefit = Interest on margin account in 2018 = \$18,634
Finance	Investment Portfolios	\$25,267,654	In accordance with state law and bond resolutions, Staff prudently invests the Power Agencies' funds in safe, diversified instruments in a manner that emphasizes safety of principal and liquidity and maximizes return on investment. Permitted investments include U.S. Treasury notes and bonds, federal agency notes, obligations of the State of North Carolina, prime quality commercial paper, certificates of deposit, bankers' acceptances, repurchase agreements, money market funds and mortgage-backed securities guaranteed by federal agencies. Investment revenues are used to offset expenses and reduce wholesale electricity rates.	Total Benefit = Investment revenues = \$25,267,654

CONTRACT ADMINISTRATION

Contract Administration	Coal Ash Settlement	\$3,700,000	20 year savings includes, 18MW DG, NCUC disallowance of 10% of costs, and deferral of prior period coal ash costs. Savings is calculated for 20 year period 2015-2035	Total Benefit = \$74,000,000 divided by 20 years = \$3,700,000
Contract Administration	Contract Administration - Billing reviews, Contract and Capital Addition approvals	\$197,625	As a result of the staff's review of Capital Additions, Third Party contracts, and O&M expenses, NCMPA1 challenged several items in 2018 resulting in savings of \$197,625. The main challenge item relates to SC tax allocations on capital projects.	Total Benefit = Savings to NCMPA1 in 2018 = \$197,625
Contract Administration	DOE Settlement 2011-2013	\$5,886,376	NCMPA's portion of the DEP lawsuit against DOE for not accepting Spent fuel and having to make accommodations on site at Brunswick and Harris during 2011-2013 time period. Legal expenses were subtracted from settlement.	Total Benefit = \$5,886,376
Contract Administration	ESPS project additions agreement	\$89,901	Capital additions agreement was negotiated and authorized by DEC and all Catawba Owners. Fees on Duke Energy labor was reduced from 12.5% to 7% for this project	Total Benefit for 2018 = fees calculated at 12.5% less the fees calculated at 7% for 2018 = \$89,901
Contract Administration	Harris Plant COLA cancellation costs	\$280,000	Approximately \$280,000 per year thru 2029	Total Benefit = \$280,000

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
Contract Administration	Leased Facilities Rate	\$43,680	Staff negotiated a reduction in NCEMPA's Leased Facilities Rate charged by Duke Energy from 1.1% to 0.93% effective September 2018.	Total Benefit = Original Leased Facilities Charge - New Leased Facilities Charge * 4 months (Sept-Dec) = \$43,680
Contract Administration	Low Pressure Turbine additions agreement	\$49,242	Capital additions agreement was negotiated and authorized by DEC and all Catawba Owners. Fees on Duke Energy labor was reduced from 12.5% to 7% for this project	Total Benefit for 2018 = fees calculated at 12.5% less the fees calculated at 7% for 2018 = \$49,242
Contract Administration	Materials and Supplies issue	\$8,774,142	NCEMPA issued a challenge for how Materials and Supplies costs were moved on DEP's FERC FORM 1 submittal. FERC rule against DEP resulting in refunds for the 2015-2017 time period totaling \$9.0 M for both the OATT charges and FRPPA formula rate charges.	Total Benefit = Summation of Materials and Supplies overbilling during 2015-2017 (OATT + Production) \$8,427,361 + \$346,781 = \$8,774,142
Contract Administration	Merger Agreement	\$4,462,323	The Merger Agreement of 2012 allowed for NCEMPA to construct 20MW of DG at Greenville and receive power supply benefits each month when the units operate. The savings are passed to the members on the Wholesale Power billing statement as a DG Credit. The 2018 savings number is a summation of the DG credits provided to the members.	Total Benefit = Sum of 12 months of DG Credits = \$4,462,323
Contract Administration	Merger Agreement	\$55,482	The Merger Agreement in 2012 allowed for the reduction of reserve capacity requirements for qualified generation from 22% to 12%.	Total Benefit = Sum of 12 months of Reserve Capacity Reduction = \$4,623.50 x 12 months = 55,482
Contract Administration	OATT Settlement Issues in 2018	\$1,685,496	Staff negotiated several challenge items related to the OATT formula rate including Wake Forest Leased Facilities adjustment.	Total Benefit = Sum of all Credit Adjustments in 2018. 8/2018 invoice \$1,284,683 + 9/2018 \$357,093 + 10/2018 \$43,720 = \$1,685,496
Contract Administration	Power Supply Billing Review	\$527,495	Staff challenged several items in the OATT formula rate true up from DEC. The sum of these challenge issues resulted in credits of \$527,495 which was received on the September 2018 Transmission invoice from DEC.	Total Benefit = Incorrect charge - correct charge = \$527,495
Contract Administration	Reactive Power Credit	\$227,964	Staff negotiated an increase in NCEMPA's Reactive Power Credit charged by Duke under the OATT effective January, 2012.	Total Benefit = Increased credit savings in 2018 = \$227,964
Contract Administration	Full Requirements Power Purchase Agreement (FRPPA), Transmission Billing Statements	\$816,000	Staff continuously reviews all provisions of the FRPPA and Transmission invoices (e.g., billing, contract interpretation, cost allocations, etc.) as these contracts are implemented to ensure that NCEMPA's power supply costs are as low as possible. It is estimated that each member would require 0.3 FTE of internal staff or consultants to provide similar services.	Total Benefit = ((0.3 FTE x \$85,000/FTE) x 32 members) = \$816,000
Contract Administration	Operating and Fueling Agreement, Interconnection Agreement, and Transmission billing statements	\$807,500	Staff continuously reviews all provisions of the Operating and Fueling Agreement, the Interconnection Agreement, and Transmission invoices (e.g., billing, contract interpretation, cost allocations, etc.) as these contracts are implemented to ensure that NCEMPA's power supply costs are as low as possible. It is estimated that each member would require 0.5 FTE of internal staff or consultants to provide similar services.	Total Benefit = ((0.5 FTE x \$85,000/FTE) x 19 members) = \$807,500

LOAD AND DEMAND SIDE MANAGEMENT (DSM) BENEFIT

VALUE CATEGORY	VALUE AREA	2018 YEAR END BENEFITS	DETAILS	CALCULATIONS
DSM	DSM/Load Management	\$41,914	Staff added VR controls in Kinston and installed VR controls for Hobgood. The annual benefit for Hobgood is 400 kW of load reduction and 1,500 kW of load reduction for Kinston.	Total Benefit = (Additional Annual VR reduction for Kinston + Annual VR reduction for Hobgood) x avoided wholesale cost rate = (400 kW + 1500 kW) x \$22.06/kW = \$41,914
DSM	DSM/Load Management	\$69,535,677	Staff monitors system conditions, sends out load management notifications, and operates load management systems to obtain savings for the NCEMPA Members.	Total Benefit = From FR Demand Rate plus transmission and system loss rate x 12 months' x 1000 (kW/MW) x est. monthly average reduction (MW) [less the sum of Rider 6A DG credits]= (\$18.98/kW Jan-Mar; \$22.06/kW Apr-Dec) x 12 months x 1000 kW/MW x (288.8MW Jan-Mar; + 290.0MW Apr-Dec) [less \$4,462,323 (Rider 6A credit)]= Total DSM Benefit of \$69,535,677
TOTAL:		\$492,512,973		