2018-2021 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

June 3, 2016

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1.0 Executive Summary

Black Hills/Colorado Electric Utility Company, LP ("Black Hills" or "Company") is seeking approval of its Renewable Energy Standard ("RES") Compliance Plan for 2018 through 2021. ("RES Plan"). Black Hills is filing its 2016 Electric Resource Plan ("2016 ERP") concurrently with this RES Plan.[1]

Black Hills has the distributed generation ("DG") Eligible energy resources needed to meet the separate wholesale and retail DG requirements of the RES through 2027. Black Hills will be able to meet these wholesale and retail DG requirements with the Busch Ranch Wind Project ("Busch Ranch"), existing and authorized on-site solar and Community Solar Garden ("CSG") program resources, and Renewable Energy Credits ("RECs") from a contract with Vestas for a 1.8 MW wind turbine. Nevertheless, Black Hills believes there is merit in continuing to support retail DG resources in Black Hills' service territory. Therefore, the Company is proposing, for the RES Plan, to continue both the on-site solar and CSG programs, with the modifications proposed herein. The Company is proposing to offer 1,500 kW of annual on-site solar capacity in each of the RES Plan years. For the CSG program, Black Hills is proposing both a standard offer program and a Request for Proposal ("RFP") program with a maximum of 1,000 kW and 1,500 kW, respectively, made available in each of the RES Plan years.

Separately, under the RES established by C.R.S. § 40-2-124. *et seq.* (the "RES Statute") and implemented by Rules 3650 through 3668 (the "RES Rules"), Black Hills is required to generate a minimum of 20 percent of its retail electricity sales from Eligible energy resources through 2019. Black Hills will meet this requirement. However, when this requirement increases to 30 percent of retail sales in 2020, Black Hills' then existing Eligible energy resources will not be able to generate enough RECs to meet this standard absent acquisition of additional Eligible energy resources or RECs. [2]

The Company's 2016 ERP evaluated both the Company's need for resources to meet future electricity demand as well as the Company's compliance with the RES. As a result of the evaluations, Black Hills identified a Preferred Plan that includes the addition of 60 MW of wind resources as energy resources in 2019. The Company estimates that this 60 MW wind resource will supply sufficient RECs for compliance with the above-mentioned 30 percent RES requirement through 2025. Black Hills' Action Plan to implement the Company's Preferred Plan recommends that the Company engage in a Phase II competitive solicitation to acquire up to 60 MW of Eligible energy resources by 2019. This solicitation will allow the Company to determine if Eligible energy resources can be acquired at a cost that will provide savings for customers and generate sufficient RECs such that Black Hills will comply with the 30 percent RES requirement from 2020 through 2025.

[1] Black Hills petitioned for a 6-month delay in making its 2016 ERP and RES Plan filing in Proceeding No. 15V-0622E. The Commission approved the variance in Decision No. C15-1071 and ordered the Company to file its 2016 ERP and RES Plan no later than six months beyond the later of the date upon which the Commission issued a final decision in Proceeding No. 14A-0535E or Proceeding No. 15A-502E.

[2] Black Hills' "then existing" Eligible energy resources include: 2006-2017 existing and authorized solar programs, Vestas 1.8 MW Wind Facility, Busch Ranch, and the Peak View Wind Project.

Black Hills used the modeling from its 2016 ERP to calculate the avoided costs and net incremental costs of the on-site solar and CSG programs proposed in this RES Plan, the Vestas 1.8 MW Wind facility and the proposed 60 MW Wind Project in 2019. Black Hills determined the net incremental cost of these Eligible energy resources by comparing two 2016 ERP model runs to estimate the avoided costs of the Eligible energy resources over the ten-year RES planning period of 2018-2027 ("RES Planning Period"). Black Hills' remaining Eligible energy resources, Busch Ranch, the Peak View Wind Project and the capacity installed and authorized through the Company's 2006 through 2017 solar programs, have been locked-down by prior Commission orders. The Company, as discussed in this Plan, used the locked-down incremental cost of those resources when calculating the total retail rate impact for the period of the lock-down. The annual avoided costs and the annual net incremental costs for these resources are detailed in Section 4 of this Plan.

In this RES Plan, Black Hills proposes to use excess Renewable Energy Standard Adjustment ("RESA") revenues derived from its 2 percent rider to pay down the RESA balance, saving customers interest expense. If the Commission approves the Company's proposed on-site solar and CSG programs and if the Company is able to acquire, at a cost that provides savings for customers, 60 MW of Eligible energy resources in 2019, the Company projects that the RESA balance will be positive in 2020.

2.0 Introduction and Definitions

This RES Plan is being filed by Black Hills pursuant to the RES established by the RES Statute" and implemented by the RES Rules. This Plan details how the Company will comply with the RES Rules covering compliance years 2018 through 2021 and the RAP (2016 through 2022) of the 2016 ERP filed concurrently with this RES Plan.

The following definitions are from the Commission's RES Rules and are reproduced below, in part, for the convenience of the reader:

> "Community solar garden" or "CSG" means a solar electric generation facility with a nameplate rating of two megawatts or less that is located in or near a community served by an investor owned QRU where the beneficial use of the renewable energy generated by the facility belongs to the subscribers of the CSG. . . . (Rule 3652(e)).
>
> "Eligible energy resources" are renewable energy resources or facilities that generate recycled energy or greenhouse gas neutral electricity generated using coal mine methane or synthetic gas (Rule 3652(n)).
>
> > "Renewable energy resource" means facilities that generate electricity by means of the following energy sources: solar radiation, wind, geothermal, biomass, hydropower, and fuel cells using hydrogen derived from eligible energy resources. . . . (Rule 3652(aa)).

> "Recycled energy" means energy produced by a generation unit with a nameplate capacity of not more than fifteen megawatts that converts the otherwise lost energy from the heat from exhaust stacks or pipes to electricity and that does not combust additional fossil fuel. . . . (Rule 3652(v)).

"Qualifying retail utility" or "QRU" means any provider of retail electric service in the state of Colorado other than municipally owned electric utilities that serve 40,000 customers or fewer (Rule 3652(t)).

"Renewable distributed generation" means retail renewable distributed generation and wholesale renewable distributed generation (Rule 3652(w)).

> "Retail renewable distributed generation" means a renewable energy resource that is located on the premises of an end-use electric consumer and is interconnected on the end-use electric consumer's side of the QRU's meter. . . . (Rule 3652(ff)).

> "Wholesale renewable distributed generation" means a renewable energy resource with a nameplate rating of 30 megawatts or less that does not qualify as retail renewable distributed generation (Rule 3652(ll)).

"Renewable energy credit" or "REC" means a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of electric energy generated from a renewable energy resource. One REC results from one megawatt-hour of electric energy generated from a renewable energy resource (Rule 3652(y)).

"Renewable energy standard" means the electric resource standard for eligible energy resources specified in § 40-2-124, C.R.S. (Rule 3652(bb)).

"Renewable energy standard adjustment" or "RESA" means a forward-looking cost recovery mechanism used by an investor-owned QRU to provide funding for implementing the renewable energy standard (Rule 3652(cc)).

"RES planning period" means the QRU's estimate of "the retail rate impact of its plan to comply with the renewable energy standard at the time of the beginning of the compliance period year and for a minimum of the ten years thereafter" (Rule 3661(f)).

Additionally, the following definitions are from the Commission's Electric Resource Planning Rules:

> "Section 123 resources" means new energy technology or demonstration projects, including new clean energy or energy-efficient technologies under § 40-2-123(1)(a), C.R.S. and § 40-2-123(1)(c), C.R.S., and Integrated Gasification Combined Cycle projects under § 40-2-123(2), C.R.S. (Rule 3602(q)).

"Locked down", as used in Rule 3661(h)(V), means that the QRU has established the incremental costs of Eligible energy resources for a set period of time enabling the QRU to better estimate the retail rate impact of Eligible energy resources.

3.0 RES Regulatory Requirements and Black Hills' Historical Compliance

3.1 The Electric resource standards

In the 2004 general election, Colorado voters approved Amendment 37 which established a requirement for large providers of retail electric service to acquire a portion of their energy requirements from renewable energy resources beginning in 2007 (the first compliance year). Amendment 37 and the statute it initiated, C.R.S. § 40-2-124. *et seq.* directed the Commission to establish rules designed to implement the provisions of the RES included in the RES Statute. The Commission initiated a rulemaking process (Proceeding No. 05R-112E) and ultimately adopted the RES Rules to establish the process for implementing the RES for QRUs in Colorado. Black Hills is an investor-owned QRU.

Amendment 37 required a percentage of retail electricity sales to be derived from Eligible energy resources beginning with 3 percent in 2007 and increasing to 10 percent by 2015. It limited the retail rate impact of renewable energy resources to 50 cents per month for residential customers.

The RES Statute was amended in 2005 by Senate Bill 05-143 which increased the retail rate impact to 1 percent of total annual electric bill for each customer. The RES Statute was further amended in 2007 by House Bill 07-1281 which increased the minimum percentages and required investor owned QRUs to acquire 20 percent of their energy requirements from eligible energy resources by 2020 and thereafter. The 2007 amendments also raised the retail rate impact to 2 percent. A 2008 amendment (House Bill 08-1160) adopted statewide net metering rules. All of these versions of the RES Statute required that investor-owned QRUs acquire at least 4 percent of the eligible energy amounts from solar generation technologies with at least one-half of the 4 percent coming from on-site solar. This requirement was reflected in the RES Rules in effect at that time (Rule 3661).

In 2010, the RES Statute was amended by House Bill 10-1001 which increased the interim and 2020 minimum percentage of retail sales that must be generated by Eligible energy resources, eliminated the 4 percent solar set aside, and added distributed generation requirements. The Commission revised its RES Rules to reflect the amendments to the RES Statute. The revised rules implementing House Bill 10-1001 became effective on December 30, 2010.

The Electric resource standards for each of the compliance years since 2011 are as follows:

Table 3-01
Electric Resource Standards By Year

Period	Minimum required percent of retail electricity sales from Eligible energy resources	Minimum technology requirements as a percent of retail electricity sales from Eligible energy resources
2011 – 2012	12 percent	1 percent from renewable distributed generation with at least one-half derived from retail renewable distributed generation
2013 – 2014	12 percent	1.25 percent from renewable distributed generation with at least one-half derived from retail renewable distributed generation
2015 – 2016	20 percent	1.75 percent from renewable distributed generation with at least one-half derived from retail renewable distributed generation
2017 - 2019	20 percent	2 percent from renewable distributed generation with at least one-half derived from retail renewable distributed generation
2020	30 percent	3 percent of sales from renewable distributed generation with at least one-half derived from retail renewable distributed generation

Pursuant to Rule 3659, RECs are used to comply with the Electric resource standards. RECs can be:

- Generated by the QRU or an affiliate;
- Acquired by the QRU by supply contract;
- Acquired by the QRU by credit contract;
- Acquired by the QRU by standard offer program;
- Acquired through a system of tradable renewable energy credits, from exchanges or brokers; and
- Carried forward or borrowed forward – Rule 3654(i) and (k).

House Bill 10-1342, codified in § 40-2-127 C.R.S., established Community Solar Gardens, which are solar electric generation facilities where the beneficial use of the electricity generated by the facilities belong to the subscribers of the CSG. The energy generated from CSGs is accounted for as retail distributed generation.

Rule 3657 requires each QRU to file for Commission approval, at specified times, a proposed plan detailing how the QRU intends to comply with the RES Rules. Compliance with the RES Statute and RES Rules is subject to a retail rate impact cap. Rule 3661(a) reads as follows:

> The net retail rate impact of actions taken by an investor owned QRU to comply with the RES shall not exceed two percent of the total electric bill annually for each customer of that QRU. However, a retail customer who installs renewable distributed generation may pay a RESA charge under paragraph 3664(h) that exceeds two percent of that customer's annual electric bill.

The retail rate impact cap is a limit on the amount of Eligible energy resources that can be acquired under a RES plan. Rule 3661(h)(IV) reads, in part, as follows:

> …The maximum retail rate impact shall not exceed two percent of the total retail bill annually for each customer. To the extent the RES plan exceeds this maximum retail rate impact over the RES planning period, the investor owned QRU shall modify the RES plan to limit the acquisition of eligible energy resources so as not to exceed the maximum retail rate impact for the RES planning period…

3.2 Black Hills' Prior Compliance

Through 2015, Black Hills has been meeting the Electric resource standards with:

- RECs associated with a load ratio share of Public Service Company of Colorado's ("Public Service") non-solar renewables (wind RECs) which were credited to Black Hills in conjunction with the purchase power wholesale agreement between Public Service and Black Hills, which expired at the end of 2011;[3]
- on-site solar resources;
- solar REC purchases;
- small amounts of biomass and biodiesel;
- RECs from the 1.8 MW Vestas wind turbine;
- RECs from Busch Ranch;
- standalone REC purchases; and
- RECs associated with the 120 kW CSG that was installed in the Company's service territory in late 2015.

3.3 Black Hills' 2015-2017 RES Plan

In Decision No. C15-1279, the Commission approved the terms of the settlement agreement reached between Black Hills and several intervenors approving the Company's 2015-2017 RES Compliance Plan (Proceeding No. 14A-0535E)("2015-2017 RES Plan"). The key components of the Company's 2015-2017 RES Plan include: continuation of the on-site solar and Community Solar Garden programs; issuance of an RFP for standalone REC purchases;

[3] Black Hills used all of the remaining carry-forward Public Service wind RECs in 2014.

implementation of a stakeholder process to address issues related to the acquisition and integration of distributed generation[4] and approval of a partial waiver of Rule 3660(e), setting the interest rate that accrues on any positive RESA deferred account balance at the Commission-approved customer deposit rate.[5]

3.3.1 2015-2017 Distributed Generation On-Site Solar Program

The Company's 2015-2017 on-site solar program includes two system categories, small and medium, with three capacity tiers in the medium category. Production based incentives ("PBI") are paid for each category and tier over a ten year period. The Company established these PBI levels to maximize use of RESA funds while minimizing impacts on its deferred RESA balance. Table 3-02 shows how much capacity is allocated to the small category and each tier of the medium category during the 2015-2017 RES Plan, along with the associated proposed PBI incentive rates:

Table 3-02
2015-2017 On-Site Solar Program
Approved Annual Capacity and Production Based Incentives

System Category	Annual On-Site Solar Program Maximum kW	2015-2017 On-Site Solar Program Incentives (per-kWh production over a 10-year period)
Small: 0.5 kW up to and including 10 kW	460	$0.05[6]
Medium Tier 1: 10.001 kW up to and including 30 kW	345	$0.05
Medium Tier 2: 30.001 kW up to and including 60 kW	245	$0.075
Medium Tier 3: 60.001 kW up to and including 100 kW	100	$0.075
Authorized Annual Total kW	**1,150**	

[4] Decision No. C15-1279 at ¶ 14.
[5] "In the event the deferred balance of Black Hills's RESA deferred account turns from negative to positive before a final decision issues on the Company's next RES compliance plan including the 2018 compliance year, Black Hills shall pay interest on the positive balance at the Commission-approved customer deposit rate" (Decision No. C15-1279 at ¶19).
[6] A 5 kW PBI cap applied to the small category was removed effective December 15, 2015 in accordance with Decision No. C15-1279 issued in Proceeding No. 14A-0535E. From January 1, 2015 until that date, the interim on-site solar program, approved in Decision No. C14-1383 in Proceeding No. 14A-0923E, applied the 5 kW PBI cap to small systems.

Black Hills receives all RECs associated with these renewable energy systems delivered to Black Hills for 20 years. In addition, pursuant to the Settlement Agreement attached to Decision No. C15-1279 at ¶ 38, Black Hills has the ability to reallocate available capacity during a calendar year from tiers with lower demand to tiers with higher demand.

3.3.2 2015-2017 Community Solar Garden Program

The CSG program agreed upon by the Settling Parties in Proceeding No. 14A-0535E has two offerings: (a) a standard offer program ("Standard Offer CSG") and (b) capacity reserved for competitive solicitations ("CSG RFP"). The Standard Offer CSG includes 500 kW of capacity and the CSG RFP includes a maximum of 2 MW of CSG capacity. In aggregate, the Company's 2015-2017 CSG program allows for the installation of up to 2,500 kW in each of the 2016 and 2017 compliance plan years.[7] Pursuant to Rule 3665(d)(I), Black Hills proposed minimum and maximum purchases of renewable energy and RECs from new CSGs. The cumulative CSG programs agreed upon by the Settling Parties under the 2015-2017 RES Plan, and approved by the Commission, are shown in Table 3-03. CSG capacity reserved through the Standard Offer or RFP may come online in a subsequent year. This CSG capacity, if subscribed, will be in addition to the 120 kW CSG that came on-line in 2015.

Table 3-03
2015-2017 CSG Program

Compliance Year	Standard Offer CSG	CSG RFP Minimum	CSG RFP Maximum
2015	0 kW	0 kW	0 kW
2016	500 kW	0 kW	2 MW
2017	500 kW	0 kW	2 MW

3.3.3 Standalone REC Purchase

In the Company's 2013 Electric Resource Plan proceeding (Proceeding No. 13A-0445E), Black Hills issued a request for proposals for the purchase of standalone RECs ("REC RFP") and, based on the response to the RFP, the Company determined that the purchase of standalone RECs could be a cost-effective means of complying with the RES over a short period of time. In the Settlement Agreement approved by Decision No. C15-1279, the parties agreed that that the Company would, through issuance of a REC RFP, purchase standalone RECs needed to fill any remaining Electric resource standards compliance need for 2015, 2016 and 2017. This agreement, with respect to 2017, was contingent on the outcome of Proceeding No. 15A-0502E, the Peak View Wind Project Certificate of Public Convenience and Necessity proceeding. The Peak View CPCN was approved and the project, in combination with the Company's other Eligible energy resources is expected to supply sufficient RECs for compliance beginning at the

[7] Through Decision No. C14-1383 issued in Proceeding No. 14A-0923E, Black Hills was authorized to acquire a minimum of 120 kW and maximum of 240 kW of CSG resources in 2015 under the approved interim solar program. On June 5, 2015, the Company filed an Updated 2015-2017 RES Compliance Plan in Proceeding No. 14A-0535E which proposed that it acquire no CSG resources in 2015. The parties to the settlement agreement approved by Decision No. C15-1279 agreed that no CSG resources would be acquired in 2015.

end of 2016. In order to comply with the RES in 2015 and 2016 the Company needed to purchase standalone RECs. On December 4, 2015 the Company issued a RFP for standalone RECs. Black Hills evaluated the bids that were received in response the Company's REC RFP and purchased a total of 400,000 RECs from the successful bidder on February 12, 2016.[8]

3.3.4 Retail Distributed Generation Stakeholder Process

In order to improve dialogue and collaboration between the Company, customers, small solar developers, and other local advocates of clean, affordable eligible energy programs, the Company reinitiated stakeholder meetings on a biannual basis, with the first meeting held on February 25, 2016. These meetings will continue to (a) be conducted with the assistance of a third-party facilitator and (b) provide a forum for discussion relative to all retail DG programs in an effort to determine potential additional retail DG offerings that are appropriate and cost-effective in the Black Hills service territory. The goals of the stakeholder process include, among other things, potential revisions to increase accessibility to and participation in existing retail DG programs.

3.3.5 Positive RESA Deferred Balance Interest Rate

Black Hills strives to manage the RESA balance consistent with the requirements of the RES to charge customers no more than 2 percent annually and to use the fund to acquire RECs to meet the Electric resource standards. At the end of 2013, the RESA balance was -$10.1 million. At the time of the Settlement Agreement was filed in Proceeding No. 14A-0535E, the outcome of the Peak View Wind Project CPCN had not been determined. Therefore, in the 2015-2017 RES Plan the Company presented two models calculating the projected RESA balance. One model assumed that the Peak View Wind Project would be approved and one model assumed the Peak View Wind Project would not be approved. The model that assumed the Peak View Wind Project would be approved showed a projected positive RESA balance beginning in 2019. In the model that assumed that the Peak View Wind Project would not be approved, the RESA deferred account was projected to begin accruing a positive balance in 2017. As a result, in the modeling of this latter scenario, Black Hills proposed a reduction in its RESA surcharge from the current 2 percent to 1.52 percent. This approach minimized rate impacts and also avoided a situation where the Company was paying interest on the positive balance at its most recently authorized after-tax weighted average cost of capital pursuant to Rule 3660(e).

Several of the Settling Parties expressed concern that a reduction in the RESA surcharge would limit the Company's ability to acquire Eligible energy resources and associated RECs, as opposed to standalone RECs, in the future. In Decision C15-1279, the Commission approved a partial waiver of Rule 3660(e), allowing the Company to pay interest on a positive RESA balance at the Commission-approved customer deposit rate until the approval of the Company's next RES compliance plan. The Peak View Wind Project was approved and, therefore, it is unlikely that the Company will accrue excess funds in the RESA deferred account prior to approval of this RES Compliance Plan.

[8] As required by Decision No. C15-1279 at Ordering Paragraph 5, the executed purchase contract for RECs was provided to Staff of the Commission and the Colorado Office of Consumer Counsel (on a confidential basis).

4.0 Proposed 2018-2021 RES Compliance Plan

4.1 Distributed Generation Solar Program

4.1.1 On-Site Solar Program

Although the Company is in compliance with the small DG category from a REC perspective, Black Hills believes there is merit in continuing to support distributed generation resources in Black Hills' service territory.

The Company is proposing, for the RES Plan period, to offer a total of 1.5 MW of annual on-site solar capacity in each of the compliance plan years (2018-2021). The Company is also proposing, in this RES Plan, to modify the system categories that were approved for the 2015-2017 RES Plan.

Under the 2015-2017 on-site solar program, the Small Category, which is intended to serve residential customers, is 0.5 kW up to and including 10 kW. However, applications above 10 kW and under 30 kW (the current Medium Tier 1 Category) are typically for the residential market as well. Since this category has the same incentive level as the Small Category, it makes sense to combine the Small Category and Medium Tier 1 Category. In addition, the maximum available capacity that can be reserved under the current on-site solar program is 100 kW (which is the current Medium Tier 3 Category). Establishing a Large Category of above 100 kW up to and including 500 kW will offer large retailers and other large commercial customers incentives to install on-site solar as they attempt to comply with corporate renewable energy initiatives. Also, commercial customers may be interested in a system above 100 kW in order to realize benefits from economies of scale in terms of installed cost reductions for larger solar systems. Providing a Large Category, as proposed for the RES Plan, offers more options for the commercial market. Therefore, the Company is proposing to revise the system categories to allow for the above-mentioned three categories: Small (5 kW up to and including 30 kW), Medium (30.001 kW up to and including 100 kW), and Large (100.001 kW up to and including 500 kW). The Company is proposing to maintain the PBIs at the same level as approved for the 2015-2017 RES Plan, while also offering $0.075 per-kWh produced for the new Large Category installations.

The Company believes the proposed on-site solar offerings will be sustainable over the four-year period of the RES Plan and will continue to stimulate interest from Black Hills' customers. The following table shows how much capacity will be allocated to each category for the 2018-2021 on-site solar program, along with the associated proposed PBI incentive rates:

Table 4-01
Summary of Proposed 2018 – 2021 On-Site Solar Program

System Category	Annual On-Site Solar Program Maximum kW:	2018 - 2021 On-Site Solar Program Incentives (per-kWh production over a 10-year period)
Small: 0.5 kW up to and including 30 kW	600	$0.05
Medium: 30.001 kW up to and including 100 kW	400	$0.075
Large: 100.001 kW up to and including 500 kW	500	$0.075
Annual Total kW:	1,500	

Black Hills projects that by 2019 the 2018-2021 on-site solar program, if all four years are fully subscribed, will cost approximately $631,800 annually. This proposed program will have a small impact on the deferred balance of the RESA fund. Additional detail regarding the forecasted costs of the proposed on-site solar program is provided in Table 6 of Appendix A.

Table 4-02
Proposed 2018 – 2021 On-Site Solar Program Cost

	Year 1	Year 2	Year 3	Year 4
Total Capacity Installed (kW)*	1,500	3,000	4,500	6,000
Total Annual Cost ($)	$157,950	$315,900	$473,850	$631,800

*Costs reflect the first year that all available capacity is installed for each plan year.

Black Hills is proposing to retain its ability to, without further application, reallocate available capacity from the on-site solar program categories with lower demand to categories with higher demand. The Company is proposing that any unreserved capacity available at the end of each calendar year be rolled forward to the next calendar year for the term of this RES Plan (2018 through 2021).[9] Black Hills also requests that previously granted on-site solar Rule waivers be maintained, as requested through a separately filed motion.[10] The exception is that the Company

[9] Similar reallocation and roll-over requests by the Company (in addition to the reallocation authorized under the 2015-2017 RES Plan) have previously been approved by the Commission. See, e.g., Decision No. C14-0527 issued in Proceeding No. 14A-0365E (granted application requesting an order amending Decision No. R13-0791 authorizing the Company to re-allocate certain customer-sited solar capacity) and Decision No. R13-0791 issued in Proceeding No. 12A-1207E (approved the Amended Settlement Agreement, in part, which states at paragraph 17: "In the event that 2013 unsubscribed capacity remains in any given category of the first day of 2014, a reallocation of unsubscribed capacity and associated incentive dollars may be made by Black Hills for that category's capacity to another category that has filled its incentive capacity and for which there is continuing applicant demand").

[10] Rule waivers currently in place: Rule 3658(f)(II)(effective start date for offering incentives is from date the solar application is submitted and not from the date of contract execution); Rule 3658(f)(III)(systems up to and including 10 kW to be completed in 6 months rather than 12 months as required by Rule 3658(f)(III)); and 3658(f)(VIII)(up-front rebate not required).

is requesting that the existing Rule 3658(f)(III) waiver requiring systems up to and including 10 kW to be completed in 6 months rather than 12 months (as required by this rule) be expanded to include all systems within the new proposed Small Category (up to and including 30 kW).

Black Hills wants to maximize use of RESA funds for solar installations while also minimizing impacts to its deferred RESA balance. Black Hills believes this proposed on-site solar program reasonably balances all relevant factors.

To reflect these proposed changes, Black Hills has made minor redlined revisions to certain on-site solar contracts, which are found in Appendix B. These redlines reflect proposed changes to the following approved on-site solar agreements filed with the Commission in Proceeding No. 14A-0535E on December 10, 2015: (a) Customer-Owned Small Category PV Systems Agreements; (b) Third-Party Operator (TPO) Small Category PV Systems Agreements; (c) Customer-Owned Medium Category PV Systems Agreements; and (d) TPO Medium Category PV Systems Agreements. In addition to the changes made to conform the agreements with the proposals contained in this RES Plan, the Company made other clarifying changes as reflected in the redlines. Black Hills will file clean, compliance on-site solar agreements upon issuance of a final order in connection with this RES Plan.

4.1.2 Community Solar Garden Program

With regard to the CSG program, Rule 3665(d)(I) provides that "[f]or compliance years 2014 and thereafter, the Commission shall determine the minimum and maximum purchases of renewable energy and RECs from new CSGs …." Accordingly, Black Hills is proposing minimum and maximum amounts of CSG capacity in this RES Plan. The Company's 2015-2017 CSG Program includes two components: a standard offer program and capacity reserved for competitive solicitations. Under the standard offer program, CSG capacity is available on a first-come basis, as further detailed in the standard offer program materials attached hereto as part of Appendix C. Under the competitive solicitation component of the Company's CSG offering, the Company gives weight in the evaluation process to bids that propose to exceed the low-income set aside in Rule 3665(d)(V). Low-income subscription levels of bid proposals are to be considered along with other relevant factors, including the subscribed REC price. In addition, the Company allows bidders to structure proposals so that CSG owners may propose higher subscribed REC prices for low-income subscribers and lower subscribed REC prices for other subscribers, so long as the average aggregate of all subscribed REC prices for the project meets the avoided cost cap for the subscribed REC prices as indicated in the CSG RFP solicitation.

The Company believes that this two-component CSG program structure balances the interests of stakeholders in a manner that is consistent with Colorado law. Therefore, the Company is proposing a similar program structure for the RES Plan. There are, however, a few proposed changes. Under the 2015-2017 RES Plan, only 500 kW was made available as a CSG Standard Offer. A reservation for the entire available 2016 CSG Standard Offer amount was received within minutes of the opening of the program. As a result, the Company proposes to make a total of 1 MW available for CSG Standard Offers during each year under the RES Plan. Each CSG Standard Offer, however, will have a minimum of 10 kW and a maximum of 500 kW. In addition, in light of the increased CSG Standard Offer allocation, the Company proposes to

reduce the size of the CSG RFP offered each year under the RES Plan to 1,500 kW per year. Table 4-03 below details the proposed standard offer and CSG RFP minimum and maximum capacity levels. Of these amounts, at least 5 percent of each CSG must be set aside for eligible low-income CSG subscribers to the extent there is demand for such ownership. *See* Rule 3665(d)(V)(A).

Table 4-03
Proposed 2018-2021 CSG Program

Compliance Year	Standard Offer CSG Minimum	Standard Offer CSG Maximum Available Capacity (each Standard Offer CSG is limited to 500 kW)	CSG RFP Minimum	CSG RFP Maximum
2018	10 kW	1,000 kW	10 kW	1,500 kW
2019	10 kW	1,000 kW	10 kW	1,500 kW
2020	10 kW	1,000 kW	10 kW	1,500 kW
2021	10 kW	1,000 kW	10 kW	1,500 kW

Similar to the request with respect to on-site solar, Black Hills requests approval to roll-over any unsubscribed CSG capacity (whether from the Standard Offer or RFP) from year-to-year, without further application.

Black Hills projects that the cost of the proposed CSG program resource additions, if fully subscribed at 2,500 kW, will be approximately $615,250 annually. Thus, if fully subscribed, the cumulative cost of the CSG Program after four years is approximately $2,461,000 annually. Additional detail regarding the forecasted costs of the proposed CSG programs is provided in Table 6 of Appendix A.

Table 4-04
Proposed 2018 – 2021 CSG Program Cost

	2018	2019	2020	2021
Total Capacity Installed (kW)*	2,500	5,000	7,500	10,000
	2019	**2020**	**2021**	**2022**
Total Annual Cost ($)	$615,250	$1,230,500	$1,845,750	$2,461,000

*Assumes all available capacity is installed each year and that the CSG is installed the year following the available capacity year (*i.e.* capacity available in 2018 will be installed and producing energy in 2019).

The payments to the CSG owner will differ depending upon whether the energy and RECs involve a CSG subscriber or not. For Standard Offer CSGs, the payment structure is set forth in the Commission-approved Community Solar Gardens Agreement. The Company is proposing that payment structure for the proposed Standard Offer CSG programs remain the same as

approved in the Company's 2015-2017 RES Plan. In general, the payment structure is as follows:

Table 4-05
Standard Offer CSG Payment Structure

Transaction	Payment Amount
Subscribed Energy	Credit paid to CSG subscribers pursuant to Community Solar Garden Service Tariff
Subscribed RECs	CSG owner is paid the price of $ [the avoided cost amount in effect at the time the standard offer for the CSG is opened,] per MWh for RECs
Unsubscribed Energy and RECs	CSG owner is paid at a rate equal to the Company's average hourly incremental cost of electricity supply over the immediately preceding calendar year pursuant to Rule 3665(c)(V)

To reflect the proposed changes to the CSG Standard Offer program, Black Hills has made minor redlined revisions to the contracts for CSG resources and materials implementing the standard offer for CSG resources, which are found in Appendix C. These redlines reflect proposed changes to the following approved CSG Standard Offer materials filed with the Commission in Proceeding No. 14A-0535E on February 1, 2016: (a) CSG Standard Offer Application Process; (b) CSG Standard Offer Application; (c) CSG Standard Offer Deposit Agreement; (d) CSG Standard Offer Escrow Agreement; (e) CSG Standard Offer Level 2 Renewable Energy System Review; (f) CSG Standard Offer Community Solar Garden Agreement; (g) CSG Standard Offer Interconnection Application/Agreement for Parallel Generation Service; (h) CSG Standard Offer Subscriber Agency Agreement; and (i) CSG Standard Offer Low Income Verification Form. In addition to the changes made to conform these documents with the proposals contained in this RES Plan, the Company made other clarifying changes as reflected in the redlines. Black Hills will file clean, compliance CSG Standard Offer materials upon issuance of a final order in connection with this RES Plan.

For CSGs acquired through a RFP solicitation, the Company will accept bids that are between the avoided cost amount in effect at the time the standard offer for the CSG is opened and $0.00. The payment structure for bids received and ultimately accepted pursuant to any CSG RFP process is as follows:

Table 4-06
CSG RFP Payment Structure (if bid accepted)

Transaction	Payment Amount
Subscribed Energy	Credit paid to CSG subscribers pursuant to Community Solar Garden Service Tariff
Subscribed RECs	CSG owner is paid the price of $ ____[up to the avoided cost amount in effect at the time the CSG RFP is opened, as reflected in the Company's Tariff No. 8 at Sheet No. R36] per MWh* for RECs**
Unsubscribed Energy and RECs	CSG owner is paid at a rate equal to the Company's average hourly incremental cost of electricity supply over the immediately preceding calendar year pursuant to Rule 3665(c)(V)

*Note: This is a cap (currently $29.47/MWh) and CSG owners can propose less than this amount to make an application submitted during the solicitation process more competitive.
**Note: As described above, the Company may accept project bids with differing prices based on whether the subscribed REC involves a low-income subscriber or not, so long as the average aggregate REC price for the project bid is at or below the avoided cost amount in effect at the time the CSG RFP is opened. Black Hills will accept REC prices anywhere from zero dollars up to the avoided cost cap.

To reflect the proposed changes to the CSG RFP program, Black Hills has made minor redlined revisions to the "Black Hills/Colorado Electric Utility Company, LP Request for Proposals for Energy and Renewable Energy Credits (RECs) from Qualified Community Solar Gardens, along with its Appendices" ("CSG RFP"), which is found in Appendix D. These redlines reflect proposed changes to the CSG RFP filed with the Commission in Proceeding No. 14A-0535E on February 1, 2016. In addition to the changes made to conform this document with the proposals contained in this RES Plan, the Company made other clarifying changes as reflected in the redlines. Black Hills will file a clean, compliance CSG RFP upon issuance of a final order in connection with this RES Plan.

4.1.3 Solar Tariffs

Several changes are required to the Company's on-site solar and CSG tariffs as a result of the proposed RES Plan. Black Hills has made minor redlined revisions to the applicable solar tariffs, which are found in Appendix E. These redlines reflect proposed changes to the currently effective solar tariffs. In addition to the changes made to conform the solar tariffs with the proposals contained in this RES Plan, the Company made other clarifying changes as reflected in the redlines. Black Hills will file clean, compliance solar tariffs upon issuance of a final order in connection with this RES Plan.

4.2 Additional Eligible Energy Resources

The Company is filing its 2016 ERP in conjunction with this RES Plan. The analysis conducted for the 2016 ERP used industry-accepted methods to determine the capacity necessary for expected future load growth and modeling to determine the cost to add Eligible energy resources sufficient to comply with the RES established by the RES Statute and implemented by the RES Rules.

As a result of the 2016 ERP analysis that included development of a load forecast, a load and resource balance, capacity expansion and production cost modeling, retail rate impact evaluations and risk analysis, Black Hills is recommending a Preferred Plan that does not include the addition of any new capacity resources during the RAP. However, based on bid pricing that was received in the Company's 2014 All-Source Solicitation, the Preferred Plan does include the addition of 60 MW of wind resources in 2019. The Company used bid data submitted in the 2014 All-Source Solicitation as inputs in its modeling. Based on the bid prices, the forecasted cost of natural gas, and the forecasted electric prices, the model identified a 60 MW wind resource in 2019 as an economical option for energy. In addition, with the acquisition of 60 MW of wind resources in 2019, Black Hills will be able to acquire all of the renewable RECs required by the RES Statute and RES Rules through 2025. By 2026, the Company will likely need to acquire additional Eligible energy resources in order to stay in compliance with the RES. However, based on the Commission's current electric resource planning and RES rules these additions will be considered in future resource plans and RES compliance plans. Table 1 in Appendix A shows the Company's ERS compliance if the Company does not acquire any additional Eligible energy resources.

Black Hills' Action Plan to implement the Company's Preferred Plan recommends that the Company engage in a Phase II competitive solicitation to acquire up to 60 MW of Eligible energy resources by 2019. This solicitation will allow the Company to determine if Eligible energy resources can be acquired at a cost that will provide savings for customers and generate sufficient RECs such that Black Hills will comply with the RES through 2025.

4.3 Retail Rate Impact and Locked-Down Net Incremental Costs of Eligible Energy Resources

Rule 3661 establishes the parameters for determining the retail rate impact of implementing the RES. Rule 3661(a) states that the net retail rate impact of actions taken by an investor-owned QRU to comply with the RES shall not exceed 2 percent of the total electric bill annually for each customer. Black Hills currently collects 2 percent from its retail customers and credits the revenues into the RESA account to track both RESA collections and the incremental costs of Eligible energy resources that are charged against the RESA.

The basic method for calculating the incremental costs of renewable resources that are collected through the RESA account is set forth in Rule 3661(h). This rule requires that the QRU determine the net incremental cost of Eligible energy resources by comparing two scenarios to estimate the resource composition of the utility's future electric system and the cost and benefits of that system over the RES planning period. The first scenario is a "RES plan" that reflects the

utility's plans and actions to acquire new Eligible energy resources necessary to meet the RES. The second scenario is a "No-RES plan" which reflects the utility's resource plan that replaces the new Eligible energy resources in the RES plan with new non-renewable resources reasonably available. Net incremental cost is determined over a ten-year RES planning period and is the calculated difference between the RES and No-RES over that period. *See* Rule 3661(f).

For this RES Plan, Black Hills used the fundamental modeling methodology from the approved 2013 ERP to calculate the net incremental costs of its existing REC obligations derived from existing solar program installations (all on-site solar installed since 2006, including but not limited to, the approved 2013-2014 solar program, 2015-2017 solar program), the Vestas 1.8 MW wind facility, Busch Ranch and the Peak View Wind Project. The Company has adjusted its modeling to reflect current market conditions, the continuation of the on-site solar and CSG programs as proposed in this Plan, the RESA balance at the end of 2015, and the Company's current revenue forecast.

4.4 Locked-Down Eligible Energy Resources

Rule 3661(h)(III) considers all Eligible energy resources whose acquisition commenced prior to July 2, 2006 to be considered "sunk" resources, meaning that those resources and their cost impacts are included in both the RES Plan and the No-RES Plan.

The Eligible energy resources included in Table 4-07 have had their respective incremental costs locked-down by prior Commission decisions. For the lock-down periods shown on Table 4-07, the locked-down incremental costs of those resources are included when calculating the retail rate impact. These resources are included in both the RES and No-RES plans when calculating the RESA balance and related retail rate impact.

Table 4-07
Locked-Down Eligible Energy Resources

Resources	Decision No. and Lock-Down Period
Busch Ranch Wind Project	Decision No. C15-1279 Locked-Down from 2015 through 2024
2006 through 2017 Solar Programs	Decision No. C15-1279 Locked-Down from 2015 through 2024
Peak View Wind Project	Decision No. C15-1182 Locked-Down from 2017 through 2026

Table 4-08, Table 4-09 and Table 4-10 include the respective costs, avoided costs and net incremental costs locked-down for each of these Eligible energy resources.

Table 4-08
2016 – 2024 On-going Annual Net Incremental Costs/(Savings)
of Solar Retail DG Programs

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Net Incremental Cost* ($/MWh)
2016	($44.39)	$83.02	$38.63
2017	($48.48)	$82.69	$34.21
2018	($50.76)	$87.78	$37.01
2019	($55.84)	$87.78	$31.94
2020	($54.59)	$87.78	$33.18
2021	($56.89)	$87.78	$30.89
2022	($60.97)	$76.76	$15.79
2023	($64.72)	$76.13	$11.41
2024	($67.26)	$69.29	$2.03

Table 4-09
2016 – 2024 On-going Annual Net Incremental Costs/(Savings)
of Busch Ranch Wind Project

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Annual Net Incremental Cost ($/MWh)
2016	($40.38)	$52.92	$12.54
2017	($43.29)	$51.96	$8.67
2018	($45.47)	$51.04	$5.57
2019	($47.79)	$50.18	$2.39
2020	($51.06)	$49.38	($1.68)
2021	($52.94)	$48.63	($4.31)
2022	($56.40)	$48.33	($8.07)
2023	($58.52)	$48.18	($10.34)
2024	($62.53)	$48.03	($14.50)

Table 4-10
2016 – 2026 On-going Annual Net Incremental Costs/(Savings)
of Peak View Wind Project

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Annual Net Incremental Cost ($/MWh)
2016	($31.19)	$48.68	$17.49
2017	($33.18)	$48.68	$15.50
2018	($35.13)	$43.26	$8.13
2019	($37.70)	$35.52	($2.18)
2020	($40.11)	$30.21	($9.90)
2021	($43.12)	$26.37	($16.75)
2022	($45.68)	$22.52	($23.16)
2023	($48.28)	$19.75	($28.53)
2024	($51.51)	$18.09	($33.42)
2025	($54.10)	$16.42	($37.68)
2026	($57.16)	$14.74	($42.42)

4.4.1 Busch Ranch Wind Project Integration Costs

In Decision No. C15-1279 the Commission locked-down the net incremental costs of the Busch Ranch Wind Project. In that proceeding, the Company estimated the integration costs of the project based on results from the Company's 2010 Wind and Solar Integration Study. The integration cost estimated for the Busch Ranch Wind Project was $196,443 per year. Beginning January 1, 2015, Public Service implemented a new Variable Energy Resources ("VER") tariff that is applicable to all entities within its Balancing Authority, including Black Hills. The tariff includes two components: Schedule 3 VER Generation and Frequency Response Ancillary Services charge and Schedule 16 Flex Reserve Service Ancillary Services charge. Black Hills estimates that the cost of these two Public Service tariffs for Busch Ranch over the locked-down period of 2016 through 2024 will be as follows:

Table 4-11
2016 – 2024 Estimated Annual Schedule 3 and Schedule 16 Tariff Costs for Busch Ranch Wind Project ($/MWh)

Year	Estimated Annual Cost ($)
2016	$473,889
2017	$485,736
2018	$497,880
2019	$510,327
2020	$523,085
2021	$536,162
2022	$549,566
2023	$563,305
2024	$577,388

Black Hills has included these tariff costs in the locked-down Busch Ranch incremental costs as a replacement for the previously modeled $196,443 per year integration cost.

4.5 Eligible Energy Resources to be Locked-Down

The RES Rules recognize the difficulty in estimating the incremental costs associated with the acquisition of Eligible energy resources given that these costs can change from year to year. Rule 3661(h)(V) allows the utility to "lock-down" the costs of Eligible energy resources if the utility requests the Commission to do so. This lock-down process eliminates the year-to-year changes in the assumptions which drive the annual incremental cost estimates, and allows the utility to better project the total incremental costs charged to the RESA for Eligible energy resources.

In this proceeding, Black Hills is proposing to lock-down the net incremental costs of the following Eligible energy resources for the time period 2018 through 2024:

- Proposed 2018-2021 on-site solar program;
- Proposed 2018-2021 CSG program; and
- Vestas 1.8 MW Wind facility.[11]

Once all of the Eligible energy resources that have not been locked-down have been identified, the RES and the No-RES Plans can be run. The costs identified in the RES Plan then are compared to the costs identified in the No-RES Plan, the resulting difference in costs is the

[11] "Black Hills further acknowledges and agrees to calculate and propose an avoided cost amount for the Vestas demonstration wind turbine in its next RES Compliance Plan based on actual data obtained from the Vestas production meter. The Company's next RES Compliance Plan will be filed with the Company's next ERP on or before October 31, 2015 pursuant to Rule 3657(a)(IV) and covers the resource acquisition period related to that ERP" (Paragraph 19 of the Settlement Agreement attached to Decision No. C15-0317 issued in Proceeding No. 14A-0534E).

incremental cost to be allocated to and recovered through the RESA, and is included in the calculation of the retail rate impact. The avoided energy costs, which are the costs that would have been incurred without the addition of any Eligible energy resources, are charged to the Electric Commodity Adjustment ("ECA") and are sometimes referred to as "ECA Costs."

To determine the net incremental cost of the proposed 2018-2021 on-site solar program, the following two portfolios from the 2016 ERP were compared:

- **Base-with-RES Plan and Proposed 2018-2021 On-Site Solar Program** - This plan includes the proposed 2018-2021 on-site solar capacity and the Eligible energy resources that have been locked down in prior proceedings; and

- **No-RES Plan** - This model includes all of the Company's existing conventional resources and the Eligible energy resources that have been locked-down in prior proceedings.

The portfolios were compared so that the benefits associated with the addition of the Eligible energy resources could be captured. Those benefits are the avoided cost savings which consist of avoided fossil fuel expense, purchased power expense, and variable O&M production expense. Table 7 in Appendix A represent the net incremental cost calculations for the proposed 2018-2021 on-site solar program. Table 4-12 shows the net incremental costs/savings for each year in the ten-year RES Planning Period for the proposed 2018-2021 on-site solar program.

Table 4-12
2018 – 2027 On-going Annual Net Incremental Costs/(Savings) of the Proposed 2018-2021 On-Site Solar Program

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Net Incremental Cost ($/MWh)
2018	$(13.70)	$65.00	$51.30
2019	$(20.46)	$65.00	$44.54
2020	$(26.80)	$65.00	$38.20
2021	$(31.24)	$65.00	$33.76
2022	$(39.06)	$65.00	$25.94
2023	$(41.30)	$65.00	$23.70
2024	$(42.68)	$65.00	$22.32
2025	$(44.48)	$65.00	$20.52
2026	$(47.15)	$65.00	$17.85
2027	$(49.10)	$65.00	$15.90

To determine the net incremental cost of the proposed 2018-2021 CSG program, the following two portfolios from the 2016 ERP were compared:

- **Base-with-RES Plan and Proposed 2018-2021 CSG Program** - This plan includes the proposed 2018-2021 CSG capacity and the Eligible energy resources that have been locked down in prior proceedings; and

- **No-RES Plan** - This model includes all of the Company's existing conventional resources and the Eligible energy resources that have been locked down in prior proceedings.

The portfolios were compared so that the benefits associated with the addition of the Eligible energy resources could be captured. Those benefits are the avoided cost savings which consist of avoided fossil fuel expense, purchased power expense, and variable O&M production expense. Table 8 in Appendix A represent the net incremental cost calculations for the proposed 2018-2021 CSG program. Table 4-13 shows the net incremental costs/savings for each year in the ten-year RES Planning Period for the proposed 2018-2021 CSG program.

Table 4-13
2018 – 2027 On-going Annual Net Incremental Costs/(Savings) of Proposed 2018-2021 CSG Program

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Net Incremental Cost ($/MWh)
2018	-	-	-
2019	$(30.68)	$151.91	$121.23
2020	$(33.49)	$151.91	$118.42
2021	$(36.43)	$151.91	$115.49
2022	$(39.07)	$151.91	$112.85
2023	$(41.31)	$151.91	$110.60
2024	$(42.69)	$151.91	$109.22
2025	$(44.49)	$151.91	$107.42
2026	$(47.16)	$151.91	$104.75
2027	$(49.20)	$151.91	$102.72

To determine the net incremental cost of the Vestas 1.8 MW Wind Facility the following two portfolios from the 2016 ERP were compared:

- **Base-with-Vestas 1.8 MW Wind Facility** - This plan includes the Vestas 1.8 MW Wind Facility and the Eligible energy resources that have been locked down in prior proceedings; and

- **No-RES Plan** - This model includes all of the Company's existing conventional resources and the Eligible energy resources that have been locked down in prior proceedings.

The portfolios were compared so that the benefits associated with the addition of the Eligible energy resources could be captured. Those benefits are the avoided cost savings which consist of avoided fossil fuel expense, purchased power expense, and variable O&M production expense. Table 9 in Appendix A represent the net incremental cost calculations for the Vestas 1.8 MW Wind Facility. Table 4-14 shows the net incremental costs/savings for each year in the ten-year RES Planning Period for the Vestas 1.8 MW Wind Facility.

Table 4-14
2018 – 2027 On-going Annual Net Incremental Costs/(Savings) of Vestas 1.8 MW Facility

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Net Incremental Cost ($/MWh)
2018	$(30.14)	$75.05	$44.91
2019	$(34.83)	$75.80	$40.97
2020	$(38.34)	$76.56	$38.21
2021	$(41.38)	$77.32	$35.94
2022	$(44.56)	$78.10	$33.53
2023	$(46.49)	$78.88	$32.39
2024	$(50.04)	$79.67	$29.63
2025	$(50.55)	$80.46	$29.92
2026	$(54.83)	$81.27	$26.44
2027	$(56.33)	$82.08	$25.75

To determine the net incremental cost of the proposed 60 MW wind resource in 2019 the following two portfolios from the 2016 ERP were compared:

- **Base-with-2019** 60 MW Wind Resource - This plan includes the proposed 2019 60 MW wind resource and the Eligible energy resources that have been locked down in prior proceedings; and

- **No-RES Plan** - This model includes all of the Company's existing conventional resources and the Eligible energy resources that have been locked down in prior proceedings.

The portfolios were compared so that the benefits associated with the addition of the proposed 60 MW wind resource could be captured. Those benefits are the avoided cost savings which consist of avoided fossil fuel expense, purchased power expense, and variable O&M production expense. Table 10 in Appendix A represent the net incremental cost calculations for the proposed 60 MW wind resource. Table 4-15 shows the net incremental costs/savings for each year in the ten-year RES Planning Period for the proposed 60 MW wind resource.

Table 4-15
2018 – 2027 On-going Annual Net Incremental Costs/(Savings) of the Proposed 60 MW Wind Resource

Year	Annual Avoided Cost ($/MWh)	Resource Cost ($/MWh)	Net Incremental Cost ($/MWh)
2018	-	-	-
2019	$(34.61)	$41.28	$6.67
2020	$(37.08)	$42.52	$5.44
2021	$(40.54)	$43.80	$3.26
2022	$(43.42)	$45.11	$1.69
2023	$(46.01)	$46.46	$0.45
2024	$(47.59)	$47.86	$0.26
2025	$(49.52)	$49.29	$(0.23)
2026	$(52.36)	$50.77	$(1.58)
2027	$(54.98)	$52.29	$(2.69)

5.0 Status of the Renewable Energy Standard Account (RESA)

Black Hills manages the RESA balance consistent with the requirements of the Renewable Energy Standard to charge customers no more than 2 percent annually and to use the fund to acquire RECs to meet the Electric resource standards.

Table 4 included in Appendix A summarizes the actual source and use of RESA funds from 2006 through 2015. Table 5, also included in Appendix A, summarizes the forecasted source and use of RESA funds from 2016 through 2027 including the forecasted revenues, existing REC obligations, the proposed 2018-2021 on-site solar and CSG programs, avoided costs from Eligible energy resources and the forecasted RESA balance.

5.1 RESA Revenue Forecast

The Retail Revenue Forecast is based upon the Retail Sales Forecast in Table 6-01 of this Plan.

5.2 Costs of Existing REC Obligations and the Proposed 2018 through 2021 Solar Program

The next section of Table 5 of Appendix A summarizes the forecasted costs of the RECs acquired by the Company. These costs are categorized as follows:

- Forecasted Costs from Existing and Authorized On-Site Solar and CSG Distributed Generation: (Locked values approved in Proceeding No. 14A-0535E);
- Forecasted Cost of Vestas Retail DG Wind;

- Forecasted Busch Ranch Costs (Locked values approved in Proceeding No. 14A-0535E including the estimated Public Services Schedule 3 and 6 tariff costs);
- Forecasted Peak View Wind Project (Values approved in Proceeding No. 15A-0502E);
- Standalone REC Purchase (Approved in Proceeding No. 14A-0535E 2015-2017 RES Compliance Plan);
- Forecasted Cost of Proposed 2018-2021 On-Site Solar Program;
- Forecasted Cost of Proposed 2018-2021 Community Solar Garden Program; and
- Forecasted Cost of 2019 60 MW Wind Resource (including wind integration).

5.3 Avoided Costs of Eligible Energy Resources

The avoided costs section of Table 5 of Appendix A includes the forecasted avoided costs of the following:

- Solar Program Avoided Costs (Locked values approved in Proceeding No. 14A-0535E);
- Vestas Retail DG Wind Avoided Costs;
- Busch Ranch Avoided Costs (Locked values approved in Proceeding No. 14A-0535E);
- Peak View Wind Avoided Costs (Approved in Proceeding No. 15A-0502E);
- Proposed 2018-2021 On-Site Solar Program Avoided Costs;
- Proposed 2018-2021 Community Solar Garden Program Avoided Costs; and
- Proposed 2019 60 MW Wind Resource Avoided Costs.

5.4 Program Costs

Actual program costs from 2006 through 2015 are shown in Table 4 of Appendix A and were $2,402,137. These costs include certain labor and other employee expenses, advertising, office supplies, legal fees and consultant costs. Table 5 of Appendix A includes forecasted program costs of $250,000 in years in which no RES compliance plan is required to be filed and $285,000 in years in which a RES compliance plan is required to be filed with exception to 2018 and 2019. The Company has met with stakeholders in the Pueblo area and based on these conversations believes that additional marketing of the Company's on-site solar and CSG programs is warranted. Therefore, the Company is proposing to increase the program costs in 2018, 2019 and 2020 to $400,000 per year to provide adequate funds for increased program marketing and administration. These proposed program expenses are within the 10 percent limit set forth in Rule 3661(d).

5.5 RESA Balance (Under)/Over Collected

The last section of Table 5 of Appendix A shows the difference between the Total Revenue forecast and the Total RESA Costs (Net REC Costs Plus Program Costs). This difference is added to the prior year's ending Balance to determine a cumulative balance in the RESA. Interest on the cumulative balance is shown. The cumulative balance plus interest is the RESA Balance – (Under)/Over Collected. As of the end of 2015, the RESA Balance was a negative

$4,043,450 which means that Black Hills has advanced funds to cover the excess REC costs over the revenues collected.

The Company forecasts that the RESA will have a positive balance by 2020 if the Company meets all of its existing REC obligations and the Commission approves the Company's proposed 2018-2021 solar programs and the acquisition of up to 60 MW of Eligible energy resources in 2019 through a solicitation process. Table 5 of Appendix A shows that the Company will have to advance approximately $650,000 to the RESA in 2017 based on current estimates of RESA revenues, costs and avoided costs of Eligible energy resources. In its 2015-2017 RES Compliance Plan the Company indicated that in no years going forward would it have to advance funds to the RESA, however; based on the Company's revised RESA revenue forecast and the increased integration cost of variable energy resources due to Public Service's recently implemented VER tariff, the Company projects that it may need to advance funds in 2017. Thereafter, the RESA revenues exceed the costs recoverable from the RESA and the Company's RESA account begins to accumulate funds in 2020.

The forecasts included in this RES Compliance are based on projections and assumptions. Black Hills anticipates that energy sales, the level of renewable generation and other projections and assumptions will likely be different than what were used to complete the RES Compliance Plan. Though the modeling indicates that the Company will have to advance approximately $650,000 in 2017 the Company will closely monitor the RESA balance and will make the appropriate filings with the Commission as soon as the Company becomes aware that it will be necessary to advance funds to the RESA.

If this RES Plan is approved, the Company's modeling indicates that the RESA balance will turn positive in 2020 and continues to grow year-to-year. Since the Company will be in compliance with the RES from an Electric resource standard perspective, the Company believes it is advisable to reduce the RESA surcharge to prevent the accrual of a large positive RESA balance. Consequently, beginning in 2021, the Company has modeled a reduction of the surcharge until funds are necessary to support future compliance with the Electric resource standard. For modeling purposes, the Company has also applied the current Commission-approved customer deposit interest rate of 0.34 percent to the projected positive RESA balance that is projected to accrue prior to reduction of the RESA surcharge.

Applying the Commission-approved customer deposit interest rate to a positive RESA balance was agreed to by the settling parties, and approved by the Commission, with respect to the 2015-2017 RES Plan.[12] This included the grant of a partial waiver of the Rule 3660(e) requirement that the Company pay interest on any positive RESA balance at its most recently authorized weighted average cost of capital. For the legal and policy reasons expressed by the settling parties in the settlement of the 2015-2017 RES Plan, as accepted by the Commission, Black Hills requests continuation of this Rule 3660(e) waiver for this RES Plan, so that it will continue to be authorized to apply the Commission-approved customer deposit rate to any positive RESA balance. A separate motion will be filed further supporting this request.

[12] Proceeding No. 14A-0535E, Decision No. C15-1279 at ¶ 19. The settling parties (and the Commission through its order) agreed that Black Hills would pay interest on a positive RESA balance at the Commission-approved customer deposit rate, which is currently 0.34 percent, until the approval of the Company's 2018-2021 RES Compliance Plan.

6.0 Status of Eligible Energy Requirements

6.1 Retail Energy Forecast

The basis for compliance with the RES is the QRU's actual electric retail sales in Colorado (see Rule 3654). Table 6-01 below depicts the sales forecast through 2027. This forecast also shows the Electric resource standards percentages, including amounts for renewable distributed generation and retail renewable distributed generation.

Table 6-01
Retail Energy Forecast and Electric Resource Standards

Year	Sales Forecast (MWh) (a)	ERS (b) [Note 1]	Eligible Energy Required (MWh) (c) = (a) x (b)	Minimum Distributed Generation (d) [Note 2]	Minimum Retail Distributed Generation Required (e) 50 percent x (d)	Minimum Remaining Distributed Generation (f) (d) - (e) [Note 3]
2016	1,927,706	20 percent	385,541	33,735	16,867	16,867
2017	1,954,659	20 percent	390,932	39,093	19,547	19,547
2018	1,972,234	20 percent	394,447	39,445	19,722	19,722
2019	2,010,101	20 percent	402,020	40,202	20,101	20,101
2020	2,041,233	30 percent	612,370	61,237	30,618	30,618
2021	2,040,843	30 percent	612,253	61,225	30,613	30,613
2022	2,027,890	30 percent	608,367	60,837	30,418	30,418
2023	2,034,012	30 percent	610,204	61,020	30,510	30,510
2024	2,054,287	30 percent	616,286	61,629	30,814	30,814
2025	2,074,009	30 percent	622,203	62,220	31,110	31,110
2026	2,094,071	30 percent	628,221	62,822	31,411	31,411
2027	2,113,910	30 percent	634,173	63,417	31,709	31,709

Note 1:	Reflects requirements under HB 10-1001, effective August 11, 2010.	
Note 2:	For compliance years 2017 - 2019, 2.00 percent of retail sales (column "a").	
	For compliance year 2020 and thereafter, 3.00 percent of retail sales (column "a").	
Note 3:	May be retail distributed generation or wholesale distributed generation	

6.2 Existing REC Obligations

This section of the Plan describes Black Hills' existing contractual wind and solar REC procurement obligations.

6.2.1 Renewable Distributed Generation

Table 3 in Appendix A shows the retail renewable distributed generation RECs Black Hills is forecasted to receive through 2027 for: (1) solar installed through 2015; (2) the 1.8 MW wind turbine; and (3) the forecasted RECs for the 2017-2021 on-site solar and CSG programs. The

Company's first CSG came on-line in November 2015. The forecasted RECs from the 120 kW CSG are included in column (c) of Table 3.

In addition, Black Hills has a contractual obligation to acquire the RECs from a large class (100 kW to 2 MW) solar on-site installation. The associated RECs from that contract are included in column (c) of Table 3.

Table 3 of Appendix A also shows the wholesale renewable distributed generation Black Hills is forecasted to receive through 2027 from Busch Ranch. On October 16, 2012, the 29.52 MW Busch Ranch Wind Project located south of Pueblo, Colorado in Huerfano County began commercial operation. The Company owns fifty percent of the facility and has entered into a Renewable Energy Purchase Agreement with AltaGas for the energy and RECs produced by the remaining fifty percent of the wind facility. The wholesale distributed generation forecast in Table 3 is for Busch Ranch and is based upon a capacity factor of 38.04 percent. The Busch Ranch RECs will be used to meet the wholesale renewable distributed generation requirements and will contribute to the Electric resource standards through 2027 as shown in columns (p) and (q) of Table 3.

6.2.2 Community-Based Projects

Rule 3652 defines a "community-based project" as a project located in Colorado and: (a) that is owned by individual residents of a community, a local nonprofit organization, a cooperative, a local government entity, or a tribal council; (b) whose generating capacity does not exceed thirty megawatts; and (c) for which there is a resolution of support adopted by the local governing body of each local jurisdiction in which the project is to be located. Rule 3654(f) provides that, for purposes of compliance with the RES, each kilowatt-hour of eligible energy generated from a community-based project shall be counted as 1.5 kilowatt-hours of eligible energy. The Company has identified in Table 3 of Appendix A, column (d), those projects which it believes constitute community-based projects. Black Hills has three such projects, all of which are solar. One of the projects is with the City of Pueblo (Waste Water), one is with City of Pueblo Fire Station and one is with the Pueblo Community Health Center. These projects are projected to produce approximately 600 RECs annually.

6.3 Proposed REC Obligations

Pursuant to this Plan, the Company proposes to acquire RECs from new on-site solar program, CSG offerings and the 60 MW Wind Resource in 2019 that were described in Section 4 of this Plan. The REC forecast for these proposed on-site solar and CSG programs is included on Table 3 of Appendix A and the REC forecast for the 60 MW Wind Resource in 2019 is included in Table 2 of Appendix A.

7.0 Section 123 Resources

The Company is not requesting Section 123 determination for any resources. However, this could change if the Commission approves the Company's request to conduct an Eligible energy

resource solicitation and bids are received that the Company deems cost effective and require determination of Section 123 resource qualification.

8.0 Cost Recovery

Black Hills will continue to recover the costs of its Eligible energy resource costs, up to the amount of avoided costs, through the ECA. All excess costs, including interest on the RESA balance and program costs, will be recovered through the RESA. The one exception is the 50 percent of Busch Ranch which is owned by Black Hills.

9.0 Net Metering

Rule 3664 sets out the requirements for providing net metering to compensate customers producing eligible energy on their side of the meter. Black Hills' net metering policy was established and approved by the Commission via the Photovoltaic ("PV") Service and Net Metering Service tariffs available at the Black Hills website.

10.0 Interconnection

Projects that propose to interconnect to the Company's transmission system and that do not have an existing Large Generator Interconnection Agreement ("LGIA"), Small Generator Interconnection Agreement ("SGIA"), or an existing interconnection queue position will be studied by Black Hills to estimate electric interconnection and delivery requirements and costs. Projects that propose to interconnect to the Company's distribution system will be studied pursuant to Rules 3667 or 3900 depending upon facility size.

11.0 Tracking

Black Hills uses an internal database to track and account for REC transactions. For compliance purposes, the transactions recorded include, at a minimum, RECs purchased, traded or generated on-site or off-site. Black Hills' database is organized as follows:

- List of all Eligible energy resources the QRU intends to use for compliance with the RES;
- Location of the resource, broker, owner, operator, start of operation, actual REC generation, ownership, transfer, and retirements;
- Date of REC generation;
- Counterparty and quantity of each transaction;
- Type of REC: PV on-site, PV non solar on-site, Wind, Biomass and etc.;
- Type of Transaction;
- Expiration Date (shelf life) of RECs;
- RECs carried forward from previous compliance years;

- RECs borrowed from future compliance years; and
- Balance by REC type by year.

In mid-November 2008, Black Hills Corporation obtained accounts with WREGIS related to its operations in Colorado, South Dakota, and Wyoming. In mid-December 2008, Black Hills Corporation registered with WREGIS. Commencing with the 2013 Plan year, Black Hills registered Busch Ranch with WREGIS.

12.0. Monthly Reporting

Black Hills provides two monthly reports in compliance with Commission orders. The *Renewable Energy Standard Adjustment Revenues Collected and Expenditures Report* provides a monthly view of the financial activity associated with RES compliance including revenue collected, incentives, REC payments and program expenditures. The *Renewable Energy Standard Resource Report* provides on-going information about all RECs acquired on a monthly basis.

13.0 Compliance by Rule Table

Rule	Section of Plan
3657(b): *Each investor owned QRU RES compliance plan shall include:*	
(I) Determination of the retail rate impact pursuant to rule 3661 and a presentation of projected RESA revenues, surcharges collected under paragraph 3664(h), expenditures, and deferred account balances (both positive and negative) over a minimum of ten years.	Section 4 Appendix A, Table 5
(II) For each eligible energy resource other than retail renewable distributed generation, a listing of each eligible energy resource whose on-going annual net incremental costs have been locked down and the value of the locked down on-going annual net incremental costs for each listed eligible energy resource. For retail renewable distributed generation, the QRU shall set forth this information in the aggregate, listed by the year in which the resources were acquired.	Section 4 Appendix A, Table 5
(III) For each eligible energy resource other than retail renewable distributed generation, a listing of the eligible energy resources whose on-going annual net incremental costs are expected to be locked down during the period covered by the compliance plan and the current projection of the locked down on-going annual net incremental costs for each listed eligible energy resource. For retail renewable distributed generation, the QRU shall set forth this information in the aggregate, listed by the year in which the resources were acquired.	Section 4 Appendix A, Table 5
(IV) Estimate of its retail electricity sales over a minimum of ten years.	Section 6, Table 6-01
(V) Estimate of the eligible energy and RECs that the QRU already has acquired and the QRU's estimate of the additional eligible energy and RECs that will be needed to meet both the RES under rule 3654 and the requirements for renewable	Section 4 and Section 6 Appendix A, Table 2 and Table 3

distributed generation under rule 3655.	
(VI) Estimate of the funds that the QRU will have available to generate, or cause to be generated, additional eligible energy and RECs under the retail rate impact established in rule 3661, including, but not limited to, the RESA revenues collected from residential and nonresidential retail customers and other revenue resources.	Appendix A, Table 5
(VII)Plan to acquire additional eligible energy and RECs given the constraints of the retail rate impact specified at rule 3661, including the allocation of the funds available under the retail rate impact rule to acquire eligible energy or RECs from each of the following: retail renewable distributed generation to be acquired under rule 3658 from residential retail customers; retail renewable distributed generation to be acquired under rule 3658 from nonresidential retail customers; wholesale renewable distributed generation; and eligible energy resources with nameplate ratings of more than 30 MW to be acquired pursuant to the Commission's Electric Resource Planning Rules.	Section 4
(VIII) The standard offers the investor owned QRU intends to offer customers to purchase RECs from on-site solar systems that are no larger than 500 kW and a proposal, at the discretion of the QRU, to reduce the SRO based on market conditions.	Section 4
(IX) Proposal, at the discretion of the investor owned QRU, to advance funds from year to year to augment the amounts collected from retail customers through the RESA for the acquisition of more eligible energy resources.	Section 5
(X) Proposed request for proposals including any standard contracts the investor owned QRU plans to use as part of a competitive acquisition process.	Section 4
(XI) Proposed ownership investment, if any, in eligible energy resources and	N/A

estimate of whether its investment will provide net economic benefits to the QRU's customers, entitling the QRU to extra profit on its investment, pursuant to rule 3660.	
(XII) Plan to purchase renewable energy and RECs from one or more CSGs over the period covered by the plan and subject to the requirements of rule 3665.	Section 4
(XIII) Plan to encourage eligible low-income customer subscriptions in CSGs pursuant to subparagraph 3665(d)(V).	Section 4
(XIV) The acquisition process for eligible energy resources, pursuant to rule 3656.	
(XV) The treatment, tracking, counting and trading of RECs, pursuant to rule 3659.	Section 11 Appendix A, Table 2 and Table 3
(XVI) Rules, regulations, and tariffs for the net metering for renewable energy resources, pursuant to rule 3664.	See filed tariffs and proposed changes to solar tariffs found in Appendix E.
(XVII) Application forms, standard agreements, and general procedures for the investor owned QRU's SRO programs under rule 3658 and for the interconnection of renewable energy resources pursuant to rule 3667.	Appendices B, C, D and E and filed tariffs

Appendix A

Appendix B

Customer-Owned Small Category PV Systems Agreements;
Third-Party Operator (TPO) Small Category PV Systems Agreements;
Customer-Owned Medium Category PV Systems Agreements; and
TPO Medium Category PV Systems Agreements.

Appendix C

CSG Standard Offer

CSG Standard Offer Application Process

CSG Standard Offer Application

CSG Standard Offer Deposit Agreement

CSG Standard Offer Escrow Agreement

CSG Standard Offer Level 2 Renewable Energy System Review

CSG Standard Offer Community Solar Garden Agreement

CSG Standard Offer Interconnection Application/Agreement for Parallel Generation Service

CSG Standard Offer Subscriber Agency Agreement

CSG Standard Offer Low Income Verification Form

Appendix D

Redlined CSG RFP, Including its Appendices

Appendix E

Redlined Solar Tariffs