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Sliding Scale Feed-in Tariff for Geothermal Energy Investments

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ABSTRACT

In geothermal industries investment decisions should be made for projects that must contend with upfront exploration risk and prevailing electricity prices. The Power Purchase Agreement (PPA) uses a fixed contracted price that is determined based on two regimes: the ceiling price or feed-in tariff (FIT). In a ceiling price regime, uncertainties in the exploration often lead to lengthy contract negotiations between the off-taker and the developer. At the same time, FIT tends to have a higher electricity price. Hence, a sliding scale is used to capture uncertainties in reserves and production, allowing for the exploitation of potential increases in both reserves and production through two variables: reservoir enthalpy and production capacity, referred to as the Price Matrix. Three different methods for tariff determination are examined: FIT, fixed tariff with adjustment, and sliding scale FIT (Price Matrix). Each method is evaluated under a PPA for a geothermal field using Expected Value Analysis (EVA). Results show that all three methods have an incentive to increase profitability. The increase in the Expected Net Present Value (ENPV) with FIT is highest for the developer, while the sliding scale FIT and the fixed tariff with adjustment provide closely similar results, and vice versa for the off taker. Nevertheless, the estimated shorter development time and economic certainty are benefit for sliding scale FIT. Therefore, it can be concluded that the sliding scale FIT method is better than the other two methods regarding making a win-win condition for both the off-taker and developer.

1 INTRODUCTION

In recent years, the geothermal industry has faced sole challenges, particularly during the early stages of project development. Unlike oil and gas, where price volatility significantly influences investment decisions, geothermal projects typically operate under long-term Power Purchase Agreements (PPAs) that ensure stable electricity prices. This stability reduces market risk but shifts the uncertainty to the subsurface, specifically, the ability to discover and confirm sufficient reservoir temperature and volume during exploitation.

Regardless of these uncertainties, geothermal developers must make investment decisions that remain viable under varying resource outcomes. Price determination methodology plays a critical role in shaping these decisions within the geothermal sector. Two common structures include concession-based systems and joint venture or resource-sharing agreements. A thorough understanding of initial cost components is essential for ensuring profitable investments. Typical elements include surface survey, infrastructure preparation, drilling, and power plant.

This discussion focuses on the resource uncertainties before exploration has been carried out. Its objective is to demonstrate the impact of modeling price determination under three approaches: Feed in Tariff (FIT), fixed tariff with adjustment (PA), and sliding scale FIT (SFIT). Additionally, it aims to quantify how each method affects the discounted cash flows of both developers and off takers, an important metric for guiding geothermal investment decisions.

The structure of the article is as follows: Section 2 provides an overview of the ceiling price regimes, with particular emphasis on Power Purchase Agreement (PPA). Section 3 describes three methodologies for price determination. Section 4 presents a case study of a geothermal field to analyze and compare the impact of these methodologies. Section 5 discusses the results, and Section 6 concludes the paper.

2 THE CEILING PRICE REGIME

The ceiling price regime represents a regulatory mechanism designed to establish an upper limit on the tariff payable under Power Purchase Agreements (PPAs). This approach is primarily employed to safeguard consumer interests, ensure affordability, and maintain market stability within the electricity sector. By imposing a maximum allowable price, regulators aim to prevent excessive cost pass-through to end-users while simultaneously promoting competitive procurement processes among power generators.

In the context of PPAs, the ceiling price functions as a benchmark during competitive bidding or negotiation phases. It delineates the highest permissible tariff that off takers can agree upon with generating entities. This regulatory intervention is particularly relevant in markets transitioning toward renewable energy integration, where cost variability and technological learning curves necessitate structured pricing frameworks. Under PPA, the state, as the sovereign owner of geothermal resources, engages a developer to provide technical expertise and financial investment for exploration and development activities. The agreement determines the energy production between the contracting parties over a specified period. Developers are remunerated for their capital investment and the inherent risks associated with geothermal operations, while the off taker secures energy production with a certain tariff.

The theoretical underpinning of the ceiling price regime lies in its dual objectives: economic efficiency and consumer protection. From an efficiency standpoint, the ceiling price incentivizes generators to optimize operational costs and adopt innovative technologies to remain competitive within the prescribed limit. Concurrently, it mitigates the risk of monopolistic pricing behavior, which could arise in scenarios of limited supply or asymmetric bargaining power.

However, the implementation of ceiling prices is not devoid of challenges. Setting the ceiling too low may deter investment, compromise project bankability, and hinder capacity addition. Conversely, an excessively high ceiling could dilute the intended consumer protection benefits. Therefore, regulators often rely on comprehensive cost modelling, incorporating variables such as capital expenditure, fuel costs, technology-specific performance parameters, and risk-adjusted returns to determine an appropriate ceiling level.

In summary, the ceiling price regime in PPAs serves as a critical instrument for balancing the interests of stakeholders within the electricity market. Its efficacy depends on the precision of regulatory design, the transparency of bidding processes, and the adaptability of the framework to evolving market dynamics and technological advancements (Thapar, 2024).

3 METHODOLOGY AND CALCULATION

This study emphasized to examine sliding scale FIT. A sliding scale refers to a mechanism in which tariff adjusts in response to changes in predetermined factors, typically production parameters. Within a specified range of the influencing factor, the value remains constant; however, as the range shifts, the value transitions to a new tariff. The fundamental purpose of a sliding scale is to address uncertainties that may arise throughout the project lifecycle, whether these uncertainties are technical or commercial in nature.

In oil and gas industry, various forms of sliding scales exist, linking different parameters such as production and royalty, production and profit oil split or so-called Gross-Split (Permatasari, 2023), or production and rate of return. For instance, a sliding scale that correlates production with royalty rates typically assigns higher royalty rates as production increases, thereby enabling the government to capture greater benefits from higher output. Conversely, when production declines, lower royalty rates are applied, providing contractors with an incentive to maintain operations even at reduced production levels. This approach effectively mitigates the limitations associated with a fixed royalty rate. Under a single royalty structure, the government would fail to capitalize on increased production, while contractors would lack incentives during periods of low output. In this paper, we would like to adopt similar concepts for geothermal applications by correlating production parameters and PPA tariffs. PPA tariff in geothermal context can be seen as delineation of profit sharing between off taker as a buyer and developer as a seller.

An illustrative example of this concept is the production-tariff sliding scale. This type of sliding scale constitutes the primary focus of this discussion. Specifically, the analysis examines the methodology for calculating such scales and their integration into cash flow models. To study the performance of such method, a comparison with other two price determination methods available on the market is carried out, e.g. Feed in Tariff and fixed tariff with price adjustment. The Expected Value Analysis (EVA) is used to compare the performance of the three price

determination methods. This approach is simple to implement and thus easy to recognize for a high-level understanding of the three methods. Yet, the results will give policy makers a straightforward insight regarding performance of the three methods to balance the off taker and developer profit share.

3.1 Feed-In Tariff Method

The most common methodology used by off-takers worldwide to accelerate renewable energy development is Feed-In Tariff (FIT) method. FIT guarantees renewable energy producers a fixed price per kilowatt-hour for electricity supplied to the grid over a long-term contract. This mechanism reduces investment risk by ensuring predictable revenue streams, thereby attracting private sector participation in renewable energy projects, including geothermal power generation (Büscher, E., 2012). Nevertheless, it is typically higher than wholesale market prices to ensure investor confidence and stimulate adoption (Yamamoto, 2018). Thus, FIT often overestimates the price value of electricity.

Geothermal energy, characterized by high upfront capital costs and exploration risks, particularly benefits from FIT schemes. Unlike intermittent renewables such as solar and wind, geothermal provides baseload power, making it a strategic component in decarbonizing energy systems. However, the financial viability of geothermal projects often hinges on supportive policy frameworks. FIT addresses this challenge by offering cost-reflective tariffs that incorporate generation costs and a reasonable profit margin, thus improving project bankability.

Empirical studies underscore the role of FIT in stimulating geothermal development. Nevertheless, policy effectiveness has been constrained by regulatory inconsistencies, bureaucratic hurdles, and insufficient exploration support. Modeling studies suggest that FIT set at a minimum of USD cent 11/kWh, combined with government-funded exploration and technical innovation, are essential for achieving national geothermal capacity targets by 2050 (Setiawan et al., 2022).

However, FIT is not always effective. Cross-country analyses reveal that while FIT positively influences investment in wind and hydropower, their impact on geothermal energy can be modest or even negative in certain contexts, particularly when tariff levels fail to reflect actual project costs or when complementary measures, such as risk mitigation programs are absent. Therefore, FIT design must be sector-specific, incorporating mechanisms to address geothermal unique challenges, including exploration risk and long lead times (Lyeonov, S. et al., 2025).

3.2 Fixed Tariff with Adjustment Method

In previous generations of geothermal Power Purchase Agreements, the tariff is determined before exploration provided there is regulation that allows tariff adjustments. However, static tariff structures can lead to inefficiencies, particularly when technological advancements or market conditions alter cost dynamics. Consequently, adaptive pricing policies, such as tariff adjustment mechanisms, are increasingly advocated. These mechanisms periodically revise tariffs based on changes in drilling costs, commodity prices, and financing conditions, thereby maintaining alignment with actual project economics. For example, variable tariff models developed for Indonesia incorporate parameters such as resource quality, project scale, and exploration risk allocation, offering a more nuanced approach than fixed tariffs (Randle, J.B., 2023). This method can be defined as fixed tariff with price adjustment (PA). Nevertheless, there is no certainty that the adjustment can be taken into place and therefore a probability of 50% was assumed to consider this concern. This method is also calculated by using assumptions that there will be additional process to adjust the tariff including due diligence process, negotiation, and PPA amendments which will take 2 years approximately.

3.3 Sliding Scale Feed-In Tariff Method

The proposed sliding scale FIT (SFIT) method will construct a so-called Price Matrix based on the production parameter ranges in Table 1, e.g. capacity (30 - 80 MW) and enthalpy (1,000 - 1,400 kJ/kg). Once the discounted cash flow model is developed, the tariff can be calculated for given production parameters. The two parameters are chosen to simplify the matrix into only two variables that have major pareto in determining project economics of geothermal projects (Sanyal, 2005). By using this SFIT method, the off taker gives economic certainty as the off take tariff for developers since the early stages of exploration, as well as in FIT method.

According to a certain level of financial parameter, for specific production parameters, the corresponding tariff can be calculated. It is evident that, for an identical value of production parameters, each price determination method produces a distinct discounted cash flow. Consequently, it is essential to examine the implications of each method on the Expected Net Present Value (ENPV) or discounted cash flow for both the developer and the off taker. Such an analysis will assist evaluators in determining which method is most appropriate, assessing its economic impact, and understanding the rationale for its adoption.

4 A GEOTHERMAL FIELD POWER PURCHASE AGREEMENT

To address the questions, a discounted cash flow model based on a Power Purchase Agreement (PPA) was developed. The results in this analysis are presented in the Appendix. The scenario assumes that production will commence in the seventh year, with an initial power output that follows the reservoir volume, i.e. capacity of 30 to 80 MW. Subsequently, production is projected to decline progressively until year thirty, thus make-up wells drilling is projected. The applicable production parameters and its probability of occurrence are specified in Table 1, while the financial parameters are outlined in Table 2.

Monthly production figures were converted into annual volumes, and gross revenue was computed by multiplying annual production by the tariff, with tariff calculations based on three alternative methods: FIT, PA, and SFIT. Net revenue was derived by deducting operating costs from gross revenue. For simplicity, capital expenditures were depreciated using the straight-line method, beginning in the first production year. Operating costs were estimated as a combination of fixed and variable components as described in Table 2. The probability of each production parameters scenario is discretized into 30 probability scenarios heat map as can be seen in Table 2 below. The heat map is an outcome from triangular probability distribution of capacity (min 30 MW, most-likely 50 MW, max 80 MW) and enthalpy (min 1,000 kJ/kg, most-likely 1,200 kJ/kg, max 1,400 kJ/kg).

Table 1. Probability heat map of the geothermal resources model.

		Capacity (MW)					
		30	**40**	**50**	**60**	**70**	**80**
Enthalpy (kJ/kg)	**1,000**	0.1%	0.6%	1.1%	0.8%	0.4%	0.1%
	1,100	0.6%	5.0%	9.0%	6.7%	3.3%	0.4%
	1,200	1.1%	8.8%	15.7%	11.7%	5.8%	0.7%
	1,300	0.6%	5.0%	9.0%	6.7%	3.3%	0.4%
	1,400	0.1%	0.6%	1.1%	0.8%	0.4%	0.1%

To model the performance of each method, the Expected Net Present Value (ENPV) or discounted cash flow of both developer and off taker is defined as follows

$$ENPV = \sum_{i=1}^{n} P_i \times NPV_i \quad (1)$$

where P_i, NPV_i are probability and Net Present Value of each scenario. The number of scenario (n) is 30 as can be seen in the capacity - enthalpy matrix above.

Under the PPA terms, the developer is compensated with PPA tariff, with any unrecovered balance carried forward to subsequent 30 years. The off-taker's share of profit was determined by margin between the buying PPA tariff with selling electricity tariff to the market, while the developer's share was calculated as the residual amount after deducting operating costs from gross revenue from PPA payment. The initial cost and O&M cost are determined in Table 2 below.

Table 2. Financial analysis initial data.

Parameter	Value		Unit	References
	30 MW	50 MW		
Initial cost				
Surface survey	1,219	1,828	'000 $	Wahjosoedibjo and Hasan (2015)
Infrastructure	6,095	9,142	'000 $	Wahjosoedibjo and Hasan (2015)
Feasibility study	609		'000 $	Wahjosoedibjo and Hasan (2015)
Rig mobilization	2,438		'000 $	Wahjosoedibjo and Hasan (2015)
Drilling cost exploration	5,920		'000 $/well	Ministry of Energy and Mineral Resources of Indonesia (2023)
Drilling cost exploitation	5,386		'000 $/well	Ministry of Energy and Mineral Resources of Indonesia (2023)
Well testing	609		'000 $/well	Wahjosoedibjo and Hasan (2015)
SAGS	353		'000 $/MW	Ade Lesmana et. al. (2023)
Power plant	2,049		'000 $/MW	SKM (2007)
O&M cost	80		'000 $/MW	UNFCCC/CCNUCC (2012)
Discount rate	10		%	Prasad and Raturi (2022)
Inflation rate	2		%	Average of USPPI increment
Debt ratio	75		%	Assumption
Debt interest rate	6		%	Bank Indonesia

The total drilling cost, as a component of initial and make-up cost, is calculated by multiplying number of well drilled and assumed single well drilling cost in Table 3 above. The number of well drilled is correlated with the well productivity or MW/ well that is calculated by using correlation from Sanyal (2007). It calculates the well productivity from Productivity Index (PI) of 2 l/s/bar to 30 l/s/bar. Nevertheless, to allow additional room of flexibility for developer, in this study it is assumed that the PI is 3.3 l/s/bar or equal to 10 Darcy-m which is still in the lower envelope of geothermal reservoirs permeability. Figure 1 shows the well productivity calculation at well PI of 3.3 l/s/bar adopted from Sanyal (2007).

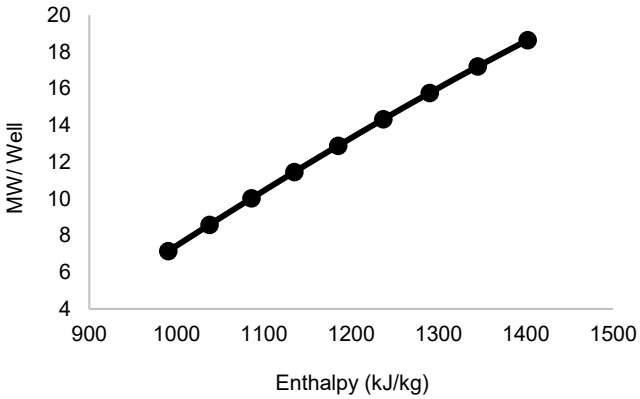


Figure 1. Well productivity assumptions at well productivity index of 3.3 l/s/bar.

According to Hakam et. al. (2025) the feasibility of the project is defined as the pretax internal rate of return-equity (EIRR) surpasses the discount rate of 10%. Thus, in this study we assume the target EIRR is 12% as a baseline to calculate tariff for each scenario as can be seen in Table 3 below.

Table 3. Normalized tariff heat map.

		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	1.00	0.96	0.94	0.93	0.92	0.90
	1,100	0.93	0.88	0.84	0.83	0.82	0.81
	1,200	0.89	0.82	0.80	0.78	0.76	0.74
	1,300	0.86	0.82	0.77	0.75	0.73	0.71
	1,400	0.85	0.77	0.77	0.75	0.73	0.71

The Feed in Tariff (FIT) is set to be 1 or equal to tariff for capacity of 30 MW and enthalpy of 1,000 kJ/kg which is the worst scenario. In the fixed tariff with adjustment (PA) method, tariff of 0.8 is used (capacity of 50 MW and enthalpy of 1,200 kJ/kg) or the most likely scenario. For sliding scale FIT (SFIT) the tariffs are equal with values tabulated in Table 3 above to maintain EIRR of 12% at every scenario. The normalized selling electricity tariff that off takers obtain from the wholesale market is assumed to be 0.85. Therefore, off takers will have a positive NPV when the PPA tariff is below selling electricity tariff. In case there is any financial gap between PPA tariff and selling electricity tariff, the government will compensate through an incentive mechanism according to prevailing regulations.

5 SLIDING SCALE FEED-IN TARIFF: RESULTS AND IMPACT

The power purchase model was executed under all three price determination methods. While the underlying cash flow structure remains consistent across these methods, the distinction lies in the computation of tariff based on the production parameters sliding scale, as detailed in Section 3. The results of this analysis are summarized in Table 4. For comparative purposes, the authors employed discounted off taker and developer cash flows, a metric commonly utilized in financial evaluations.

A comparison of the discounted off taker cash flow between the FIT and SFIT methods reveals an increment of $94,295k (from -$69,622k to $24,673k). Correspondingly, the developer's cash flow decreases by $45,793k (from $58,730k to $12,937k). This outcome demonstrates that transitioning from the non-sliding scale to the sliding scale method represents a redistribution of funds from the developer to the off taker. Off takers typically adopt sliding scales to address uncertainties in production, thereby maximizing potential saving from increased output. Consequently, it is generally advantageous for off takers to apply the sliding scale method to capture these potential savings rather than the non-sliding scale approach. The sliding scale FIT and price adjustment (PA) method achieves a balanced adjustment, with proportional increases and decreases for both parties. However, the PA method tends to have uncertainty in adjustment and longer lead time due to PPA amendment process. Figure 2 illustrates the differences in discounted cash flows across the three methods, highlighting that, given a fixed project cash flow, any shift from one method to another merely reallocates revenue between the off taker and the developer.

Table 4. Price determination methods for both discounted developer and off taker cash flow.

Method	Discounted cash flow **Off taker** ('000 $)	Discounted cash flow **Developer** ('000 $)
Feed in Tariff	-69,622	58,730
Fixed Tariff with adjustment	22,905	13,257
Sliding scale FIT	24,673	12,937

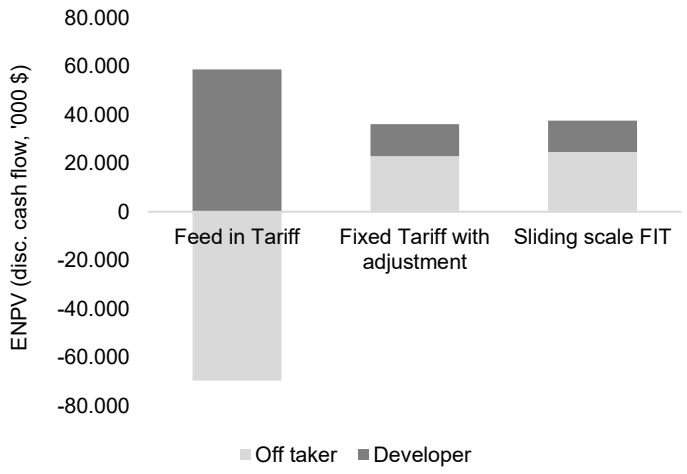


Figure 2. Expected Net Present Value (discounted cash flow) difference in the three methods

A primary critique of the non-sliding scale method is that it applies a fixed tariff regardless of production parameters. For instance, as indicated in Table 3, a normalized tariff of 1 is imposed whether the production capacity is 30 MW or 80 MW, also regardless of enthalpy of 1,000 kJ/kg or 1,400 kJ/kg. Off takers often argue that this approach is inequitable, as higher production levels should correspond to lower PPA tariff, such as the 0.8 (capacity 50 MW, enthalpy 1,200 kJ/kg) reflected under the sliding scale FIT method. To examine this criticism, the production parameter was adjusted from 30 MW to 80 MW, and the resulting outputs for each method, both for off taker and developer, were recorded, as presented in Figure 3.

The analysis was conducted in two phases. The first phase assessed incentives to increase production within a capacity tranche (e.g. 30 MW to 80 MW) at enthalpy of 1,200 kJ/kg, while the second phase examined incentives when moving enthalpy across capacity tranches. Figure 3 demonstrates that within the capacity tranche of 30 - 80 MW, both developers and off takers experience discounted cash flow increase under PA and SFIT methods. Specifically, an increase from 30 MW to 80 MW yields $40,338k, $9,024k for the developer and $38,023k, $84,903k for the off taker for PA and SFIT, respectively. However, in similar circumstances, FIT method the developers experience discounted cash flow increase, while conversely off takers engage discounted cash flow decrease. These findings shows that the sliding scale FIT (SFIT) method can incentivize production increases within production capacity tranches. Although the SFIT method imposes a penalty at lower production levels, it rewards higher production by maintaining a constant EIRR, thereby creating similar incentives as the PA method within a tranche.

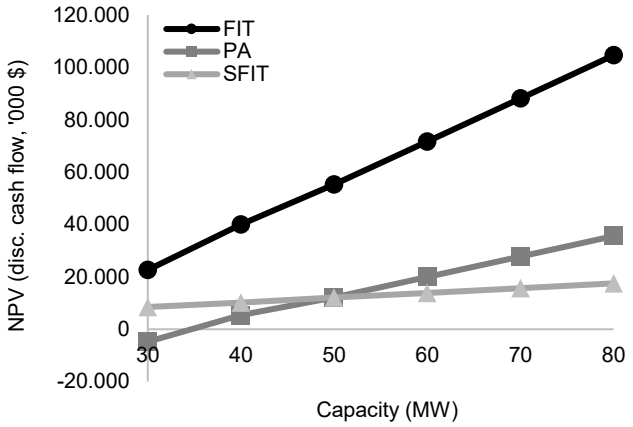


Figure 3. Developer NPV (discounted cash flow) vs. capacity in the three methods (enthalpy of 1,200 kJ/kg)

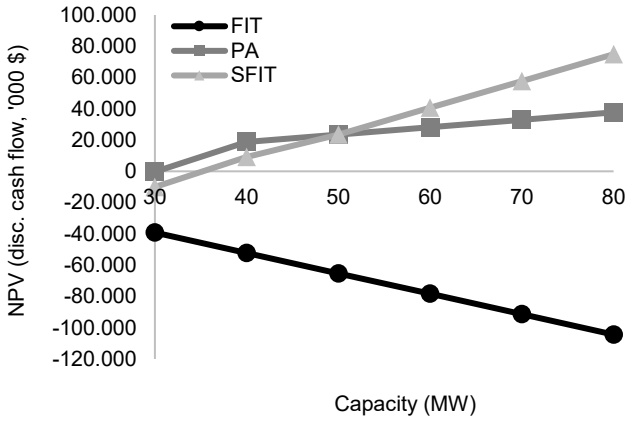


Figure 4. Off taker NPV (discounted cash flow) vs. capacity in the three methods (enthalpy of 1,200 kJ/kg)

The second phase explored incentives when enthalpy vary between capacity tranches. Figure 5 indicates that if production rises from enthalpy of 1,000 kJ/kg to 1,400 kJ/kg (capacity of 50 MW), the developer incurs a gain of $33,915k under the FIT method, $20,214k for PA method, whereas the SFIT method results in a slight loss. This finding shows that the SFIT method discourages reservoir enthalpy increases. However, as production continues

to rise within the capacity tranche, all three methods exhibit positive incentives as can be examined in the ENPV values. Regarding enthalpy variation, among the methods, the FIT provides the greatest incremental benefit to the developer, followed by the PA and then the SFIT method. This explains the developer's preference for the FIT approach and vice versa from the off-taker's perspective.

A key question arises regarding why the incremental gains differ across methods for both parties. Figure 3 and 4 reveals that as production capacity increases, the SFIT method applies equal EIRR in each capacity scenario, favouring the off taker. In contrast, the FIT method increases NPV at a higher rate, favouring developers. The PA method occupies an intermediate position with the average value approximately similar with SFIT method.

The overarching objective of a sliding scale is to achieve a mutually beneficial outcome for both off taker and developer by demonstrating the impact of SFIT methods on discounted cash flows. To mitigate the imbalance, where the FIT method favours the developer, this study recommends adopting the SFIT method while maintaining the project economics certainty and project lead time avoiding tariff amendment as required in PA method. This approach provides equitable incentives for both parties by aligning tariff with production parameters.

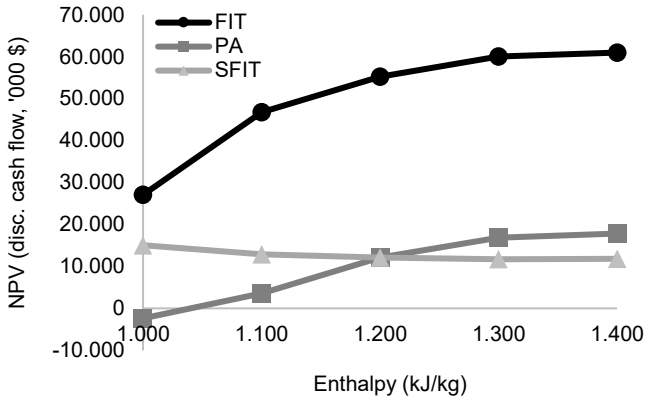


Figure 5. Developer NPV (discounted cash flow) vs. enthalpy in the three methods (capacity of 50 MW)

In conclusion, the SFIT method outperforms the FIT in terms of responsiveness to production incentives and upfront certainty of project economics while offering a more balanced distribution compared to the FIT method. This analysis underscores the importance of both off taker and developers understanding the implications of price determination calculation methods within specific production parameters. While numerous additional factors influence price determination policy design, comprehension of these methods is critical. For instance, in regions with low geological potential with high uncertainty, off takers may employ the FIT method to incentivize developers to enhance production. Conversely, in areas with medium to high geological potential, the SFIT method may be preferable, as it ensures a more equitable distribution of benefits between the parties.

6 CONCLUSIONS AND RECOMMENDATIONS

This study examines the implications of applying geothermal price determination through three methodologies: Feed in Tariff (FIT), fixed tariff with price adjustment (PA), and sliding scale FIT (SFIT). The analysis is conducted within the framework of a Power Purchase Agreement for a geothermal field.

Findings indicate that all three methods provide incentives to increase production. Specifically, the incentive to enhance production within a tranche is identical for both off taker and developer Expected NPV or discounted cash flows, regardless of the method employed. However, the FIT method yields the highest incremental benefit for the developer, while PA and SFIT methods produce quite similar outcomes. Conversely, from the off-taker's perspective, discounted cash flow is lowest under the FIT method. Notably, reducing the range of production tranches causes the non-weighted method to approximate the outcomes of the linear equation.

The study concludes that the sliding scale FIT (SFIT) method offers a more balanced distribution of cash flows between off taker and developer, ensuring that increases in production do not disproportionately favour either party, as occurs under FIT method. PA method performs quite similarly with SFIT but uncertainty in price

adjustment and longer lead time due to PPA amendment process are still questionable. Ultimately, a comprehensive understanding of the effects of each price determination methodology is essential for designing pricing policy that achieve mutually beneficial outcomes for both stakeholders. To encourage profitability of the developer, incentives can be complemented in SFIT method such as to allow certain margin when the reservoir enthalpy is better than expected.

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APPENDIX

Table A1. ENPV (discounted cash flow) of FIT method.

Developer		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	9,654	19,163	27,071	36,674	46,278	55,882
	1,100	17,888	31,753	46,760	58,995	71,230	83,465
	1,200	22,651	39,954	55,241	71,696	88,151	104,606
	1,300	26,091	40,736	60,010	77,864	95,718	113,572
	1,400	26,780	48,004	60,986	78,926	96,867	114,808

Off taker		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	-39,162	-52,217	-65,271	-78,325	-91,379	-104,433
	1,100	-39,162	-52,217	-65,271	-78,325	-91,379	-104,433
	1,200	-39,162	-52,217	-65,271	-78,325	-91,379	-104,433
	1,300	-39,162	-52,217	-65,271	-78,325	-91,379	-104,433
	1,400	-39,162	-52,217	-65,271	-78,325	-91,379	-104,433

Table A2. ENPV (discounted cash flow) of PA method.

Developer		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	-7,009	-3,809	-2,377	-1,849	509	7,969
	1,100	-5,044	-112	3,611	7,217	10,822	14,427
	1,200	-4,770	5,435	12,092	19,918	27,743	35,568
	1,300	511	6,217	16,862	26,086	35,310	44,535
	1,400	624	13,485	17,837	27,148	36,459	45,770

Off taker		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	-14,866	-11,923	-10,837	-7,680	192	-17,871
	1,100	-5,590	2,385	23,578	28,293	33,009	37,725
	1,200	-299	18,862	23,578	28,293	33,009	37,725
	1,300	3,652	18,862	23,578	28,293	33,009	37,725
	1,400	4,242	18,862	23,578	28,293	33,009	37,725

Table A3. ENPV (discounted cash flow) of SFIT method.

Developer		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	9,654	12,255	15,059	17,549	20,039	22,529
	1,100	8,879	10,949	12,924	15,231	17,538	19,846
	1,200	8,503	10,169	12,092	13,904	15,715	17,526
	1,300	8,104	10,274	11,712	13,357	15,002	16,648
	1,400	8,221	9,407	11,784	13,424	15,063	16,702

Off taker		Capacity (MW)					
		30	40	50	60	70	80
Enthalpy (kJ/kg)	1,000	-39,162	-37,992	-40,537	-38,939	-37,340	-35,742
	1,100	-20,611	-9,377	4,402	11,791	19,179	26,568
	1,200	-10,028	9,114	23,578	40,677	57,776	74,875
	1,300	-2,126	10,509	34,182	54,504	74,826	95,148
	1,400	-947	27,259	36,041	56,554	77,068	97,581