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THE IMPACT OF LYNAS ADVANCED MATERIAL PLANT (LAMP) TOWARDS SURROUNDING HOUSING MARKET PRICE

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Abstract

Lynas Advanced Materials Plant (LAMP) is situated in Gebeng industrial estate in Kuantan, Malaysia. Lynas plant processes rare earth elements that was trucked from Mt Weld Western Australia's mine site to Fremantle Port and then brought to Malaysia. Rare elements are important in greenhouse emission reduction especially for their distinctive use in wind turbines, hybrid vehicles, automotive chemical action converters and others technologies. However, the construction and the opening of Lynas plant may have caused pollution to the environment and health risk towards surrounding area. Few case studies highlighted the negative impacts of radioactive element towards the surrounding housing market price. Using before-and-after analysis and sensitivity analysis, this research seeks to evaluate the impact from Lynas plant on the price of housing (single storey terrace) in its surrounding area. The findings show that Lynas plant could be one of the factors that have affected the housing market price in the area. This research concludes that, in general, there is an increase of house price after the opening of Lynas plant, however it is evident that there is a trend of increasing house price when the house is farther away from the plant. It is hoped that the findings of this research helps in answering some of the public speculations regarding the impact of the plant.

Keywords: impact, Lynas, house, price

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INTRODUCTION

Previous research have studied the impact of pollution or radioactive to the surrounding housing market price. Nelson (1981) observed the impact of residential property values, which resulted from the Three Mile Island (TMI) nuclear tragedy. According to him, although there are two government reports stated that the nuclear tragedy have caused losses in property values, more so residential properties closest to the plant, neither report utilised elementary statistical inference methods. Nelson's objective was to find out whether the nuclear tragedy caused a statistically decline in house price, which located inside a five miles radius from the plant. Nelson used an indulgent value model called hedonic model to look at the impact of TMI on sale costs of homes in two communities within the radius. Analysis on property values close to the TMI nuclear energy facility indicated that once the accident occurred, there was a brief term call on the quantity of sales of residences within ten miles from the plant. However, sales returned to normal within four to eight weeks. Hence, this proves that nuclear plant does bring impact to surrounding property market.

In the 1980s, the Asian Rare Earth (ARE) company, owned by the Mitsubishi Chemical Company, did not safely remove its industrial waste containing radioactive thorium hydroxide. Employees and also the neighbouring community were exposed to ionising radiation, leading to birth defects and cancer, especially leukaemia cases, among the 11,000 individuals living in Bukit Merah and Papan, Perak. Seven of the eight cases of cancer were fatal. Public protests eventually forced Mitsubishi Chemical to shut its operations in 1992. The clean-up had cost the company about US\$100 million (McCoy, 2013). Although the ARE case was not focussed on the impact of the rare earth plant on property value, it does show that such plant poses negative impact on the surrounding community. In the case of ARE, the area turned hazardous and not suitable for people to be living in.

In Gebeng, Kuantan, a rare earth plant was constructed and operated by Lynas Malaysian Sdn Bhd. However, property values do not seem to be affected by the plant existence. Property development remains active and this shows the confidence of the investors and entrepreneurs within the property sector and economic climate in Pahang, significantly in Kuantan ("Lynas tidak jejas nilai hartanah", 2012). In keeping with the report of the Pahang Property Valuation Department, the value of low-cost terrace homes in Jalan 10 Gambang has increased from RM49,000 to RM68,000 per unit, as well as for three storey shop houses in Jalan Beserah from RM700,000 to RM800,000 per unit (Husin, 2012). Additionally, the Lynas plant was also said to have attracted investments in various industries as well as offers more job opportunities, maximise the uses of Kuantan Port, together with native residents who are benefitting the spill-over of current economic impacts (Bernama, 2016). This proves that the existence of the Lynas plant brings positive impact towards the value of surrounding property.

Nevertheless, some quarters objected to the statements that Lynas plant does not negatively affect surrounding property values (Muda, 2012). They contested that the statements have not been based on real facts and quite confusing. Thus, this study intends to analyse the impact of Lynas plant on the surrounding property values.

METHODOLOGY

This study employed the before and after analysis and sensitivity analysis to measure the pattern of average of percentage changes of property prices in the study area before and after the construction of Lynas Advanced Material Plant (LAMP). Secondary house price data for year 2004 until 2015 for four residential areas in Kuantan were obtained from the National Property Information Centre (NAPIC), Kuantan. The residential areas involved were Perumahan Bandar Baru Gebeng, Taman Idaman Bayu, Balok Jaya II and Balok Jaya. These four residential areas are made up of single storey terrace houses and are located near the Lynas plant.

RESULTS

Table 1 shows the percentage change of price of houses in Perumahan Bandar Baru Gebeng from 2004 to 2014. It can be seen that the prices were increasing from RM79,888 in 2004 to RM145,000 in 2014. The average of percentage change in house prices almost doubled after LAMP came into operation (8.18% compared to before (4.68%).

Table 1: Average percentage change of single storey terrace house price in Perumahan Bandar Baru Gebeng before and after LAMP operation

No.	Lot No.	Date of Valuation	Price (RM)	Percentage of Change (%)	Average of Change (%)
1	9396	23/10/2004	79,888		
2	9390	31/10/2005	79,888	0.00	
3	9539	31/01/2006	85,000	6.40	
4	9368	11/07/2007	95,000	11.76	4.68% (before)
5	9534	05/04/2008	95,000	0.00	
6	11096	05/05/2009	100,000	5.26	
7	11192	14/06/2010	110,000	10.00	LAMP Opening
8	11250	06/06/2011	115,000	4.55	
9	11170	25/01/2012	125,000	8.70	
10	11180	18/11/2013	145,000	16.00	8.18% (after)
11	11181	13/12/2014	150,000	3.45	

Source: NAPIC Kuantan, 2017

Table 2 shows the data for the transacted price of single storey terrace house in Taman Idaman Bayu from year 2004 to 2014. The lowest price recorded was RM94,000 in 2004, while the highest price was RM150,000 in 2014. This resulted in average percentage change of more than double after LAMP came into operation (6.94%) compared to before (3.22%).

Table 2: Average percentage change of single storey terrace house price in Taman Idaman Bayu before and after LAMP operation

No.	Lot No.	Date of Valuation	Price (RM)	Percentage of Change (%)	Average of Change (%)
1	8785	07/07/2004	94,000		
2	8786	08/04/2005	94,000	0.00	
3	8818	23/07/2006	99,900	6.28	
4	8731	20/03/2007	100,000	0.10	3.22% (before)
5	8778	09/04/2008	105,000	5.00	
6	8781	04/07/2009	110,000	4.76	
7	10295	28/12/2010	115,000	4.55	LAMP Opening
8	10295	28/12/2011	120,000	4.35	
9	10285	13/04/2012	125,000	4.17	
10	8795	09/12/2013	142,000	13.60	6.94% (after)
11	10305	30/10/2014	150,000	5.63	

Source: NAPIC Kuantan, 2017

Table 3 shows the data for the transacted price of single storey terrace house in Balok Jaya II from year 2005 to 2015. The lowest price recorded was RM100,000 in 2005, while the highest price was RM200,000 in 2015. The average of percentage change in house prices almost doubled after LAMP came into operation (9.40%) compared to before (4.73%).

Table 3: Average percentage change of single storey terrace house price in Balok Jaya II before and after LAMP operation.

No.	Lot No.	Date of Valuation	Price (RM)	Percentage of Change (%)	Average of Change (%)
1	5841	05/08/2005	100,000		
2	6138	03/01/2006	110,000	10.00	
3	6955	10/12/2007	110,000	0.00	4.73% (before)
4	6646	09/07/2008	117,000	6.36	
5	6956	20/11/2009	120,000	2.56	
6	7041	26/07/2010	128,000	6.67	LAMP Opening
7	5780	28/03/2011	135,000	5.47	
8	6718	20/04/2012	145,000	7.41	
9	7028	09/04/2013	168,000	15.86	9.40% (after)
10	6121	08/05/2014	180,000	7.14	
11	6950	10/09/2015	200,000	11.11	

Source: NAPIC Kuantan, 2017

Table 4 shows the data for the transacted price of single storey terrace house in Balok Jaya from year 2005 to 2014. The lowest price recorded was RM95,000 in 2005, while the highest price was RM200,000 in 2014. This resulted in average percentage change of 12.98% after LAMP came into operation compared to 8.42% before LAMP.

Table 4: Average percentage change of single storey terrace house price in Balok Jaya before and after LAMP operation

No.	Lot No.	Date of Valuation	Price (RM)	Percentage of Change (%)	Average of Change (%)
1	4065	05/11/2005	95,000		
2	4058	16/03/2006	98,000	3.16	
3	4064	13/12/2007	96,000	-2.04	8.42% (before)
4	4074	12/08/2008	115,000	19.79	
5	4096	26/04/2009	125,000	8.70	
6	4035	13/05/2010	125,000	0.00	LAMP Opening
7	4056	19/12/2011	125,000	0.00	
8	4092	19/11/2012	160,000	28.00	12.98% (after)
9	4054	07/01/2013	170,000	6.25	
10	4040	05/09/2014	200,000	17.65	

Source: NAPIC Kuantan, 2017

Meanwhile, Table 5 compares the average percentage change of house prices in the four residential areas based on their distance from LAMP. In terms of distance, among the four selected residential areas, the nearest to LAMP is Perumahan Baru Gebeng, which is located only 8km from the plant. The farthest is Balok Jay, which is 14km away from the plant.

Table 5: The Average percentage Change of House Price Based on Distance from LAMP

Period	Average Percentage Change			
	8km	12km	13km	14km
	Perumahan Baru Gebeng	Taman Idaman Bayu	Balok Jaya II	Balok Jaya
Before LAMP	4.68%	3.22%	4.73%	8.42%
After LAMP	8.18%	6.94%	9.40%	12.98%
Percentage increase	3.5%	3.72%	4.67%	4.56%

From Table 5, it can be seen that the residential areas farther from LAMP experienced higher percentage increase in their housing prices compared to those located closer to LAMP.

CONCLUSION

The findings from this research indicate that the construction and operation of LAMP do not negatively affect the house prices in its surrounding area. Despite mixed speculations on the impacts of LAMP, the housing prices in its surrounding have been increasing steadily even after LAMP came into operation. This could partly be due to the economic benefits the plant brought to the area. Previous research on impacts of nuclear facilities on property values by Bezdek and Wendling (2006) found that establishment of nuclear facilities has led to increase in property values and that the facilities also provided job opportunities to surrounding communities.

However, there is a strong pattern shown in Table 5 where, although all four residential areas continue to experience house price increase after LAMP came into operation, the biggest increase happened in residential areas farther from the plant.

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