Siting LULU Facilities: An Experience of Taiwan

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Introduction

- LULU (locally-unwanted-land-uses) syndrome has become one of society's controversial issues.
- Thus, how to break through the predicament of LULU syndrome in the siting process becomes one of the most difficult tasks for site designers and urban planners.

Research problems

- 1.How a LULU, NIMBY or NIMTOO (not in my term of office) site be built without setting off riots or endless litigation?
- 2.Are there any possibilities to resolve the tension caused by annoying NIMBY constituencies effectively?
- The aim of this research is to examine NIMBYim in Taiwan and trying to offer our experiences for siting LULU facilities successfully.

Research focus

- This study was conducted through a survey of LULU cases, 9 electric power stations and 15 solid waste incinerators, in Taiwan.
- Unlike past literature paid much attention on the effect of 'economic' factor such as compensation or auction approach on the decision of LULU site, this study calls for site planners should be more sensitive to the influence of 'noneconomic' factors in the siting selection process.

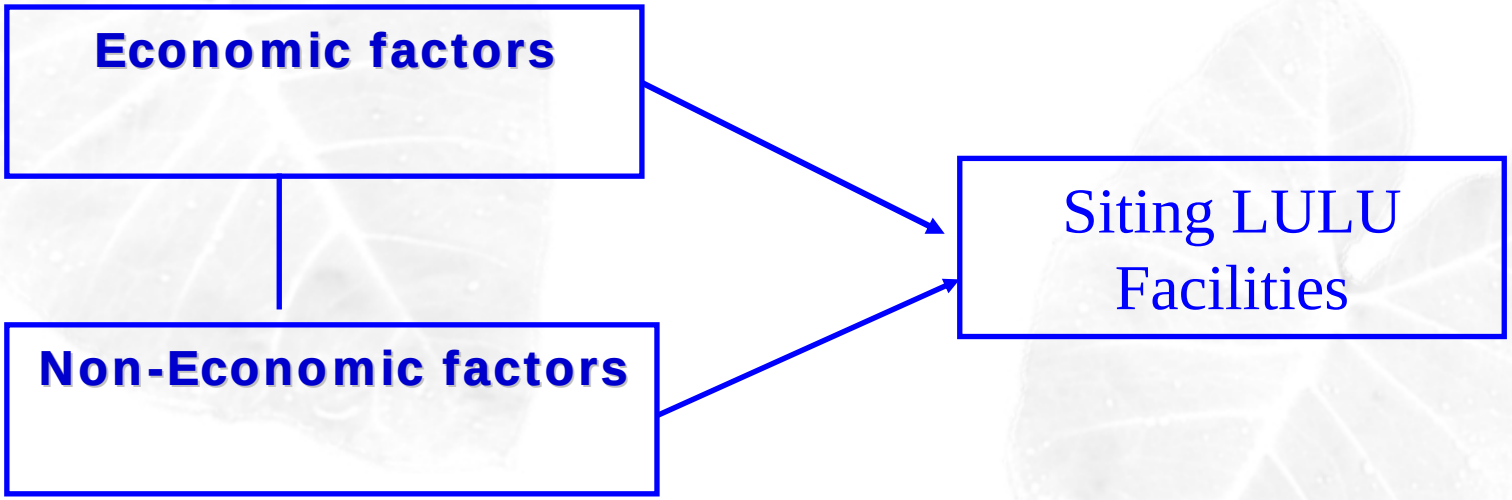
Redefining “LULU Syndrome”

- **There are many different terms, regarding LULU, as Build-Absolutely-Nothing-Anywhere-Near-Anything (BANANA), Not-In-My-Bottom-Line (NIMBL), For-Not-On-Our-Street (NOOS), etc.**
- **Redefining the features of LULUs:**
  - (1) the benefits of the public infrastructure are shared by the whole society at the expense of those local residents affected.
  - (2) It was determined that the degree of acceptance by local residents varied with the distance between the public facility and their homes.

- (3) The LULU syndrome is an irrational response. Most carry it out through passive but willful resistance – or simply put, for the sake of opposition alone.
- (4) Initially, LULUs sometimes arose between the technical experts and government officials and the community at-large over the value and purpose of the construction.

Economic vs. Noneconomic Factors influencing upon Siting LULU Facilities

- What kinds of factors influencing upon siting LULU facilities?



- **Economic factors**
  - health and property safety concerns,
  - compensation for environmental effects, and
  - living standard risk.
- **Noneconomic factors contain**
  - lack of public participation,
  - credibility deficiency, and
  - local politics.

Research Method(I): in-depth interview

- In-depth interview: to interview the representatives of the solid waste incinerators and electric power stations and the neighborhood of the sites.
- For the local people we interviewed the community leaders or the self-appointed group representative of the community. In total, we interviewed 30 people for power plants and 60 people for waste incinerators. All the interviews were recorded.
- The interviewing questions were based primarily on the two types of influencing factors mentioned above.

Research Method(II)：Structured Telephone survey

- Structured telephone interviews were conducted with 260 residents for electric power stations and 765 for waste incinerators. The former sample is fairly representative at the confidence level of 95%, having a sampling error of ±6.07%. The latter sample is satisfactorily representative at the confidence level of 95%, having a sampling error of ±3.54%.
- The research protocols were conducted by the National Taipei University's Research Center for Public Opinion and Election Studies

Table 1 Type of LULU Facilities and Samples of Interviews

Types of LULUs	Numbers	Sample of telephone interview	Sample of in-depth interview
solid waste incinerators	9	765	60
electric power stations	15	260	30

Table2 Demographics of the interviewed sample

Variable	Classification	electric power stations %(n)	solid waste incinerators % (n)
Sex	Male	65(169)	49.2(376)
	female	35(91)	50.8(389)
Age	20-29	12.7(33)	14.6(112)
	30-39	18.1(47)	23.4(179)
	40-49	35.8(93)	26.8(205)
	50-59	20.0(52)	21.8(167)
	60 or over	13.1(34)	12.8(98)

Education	Illiteracy	3.8(10)	4.4(34)
	Elementary	12.3(32)	13.5(103)
	Junior high	18.1(47)	10.8(83)
	High school	36.9(96)	35.6(272)
	College/university	26.5(69)	31.8(243)
	Master or Doctor	1.2(3)	2.5(19)
Occupation	Farmer, Fisherman	9.2(24)	3.8(29)
	Blue-collar worker	25(65)	16.6(127)
	Retail/vendor	12.3(32)	13.7(105)
	Service	11.5(30)	11.9(91)
	Civil/military	9.6(25)	9.0(69)
	Housewife	14.6(38)	5.1(39)
	Retirers	5.4(14)	19.6(150)
	Unemployed	4.6(12)	7.7(59)
	Others	7.7(20)	8.0(61)

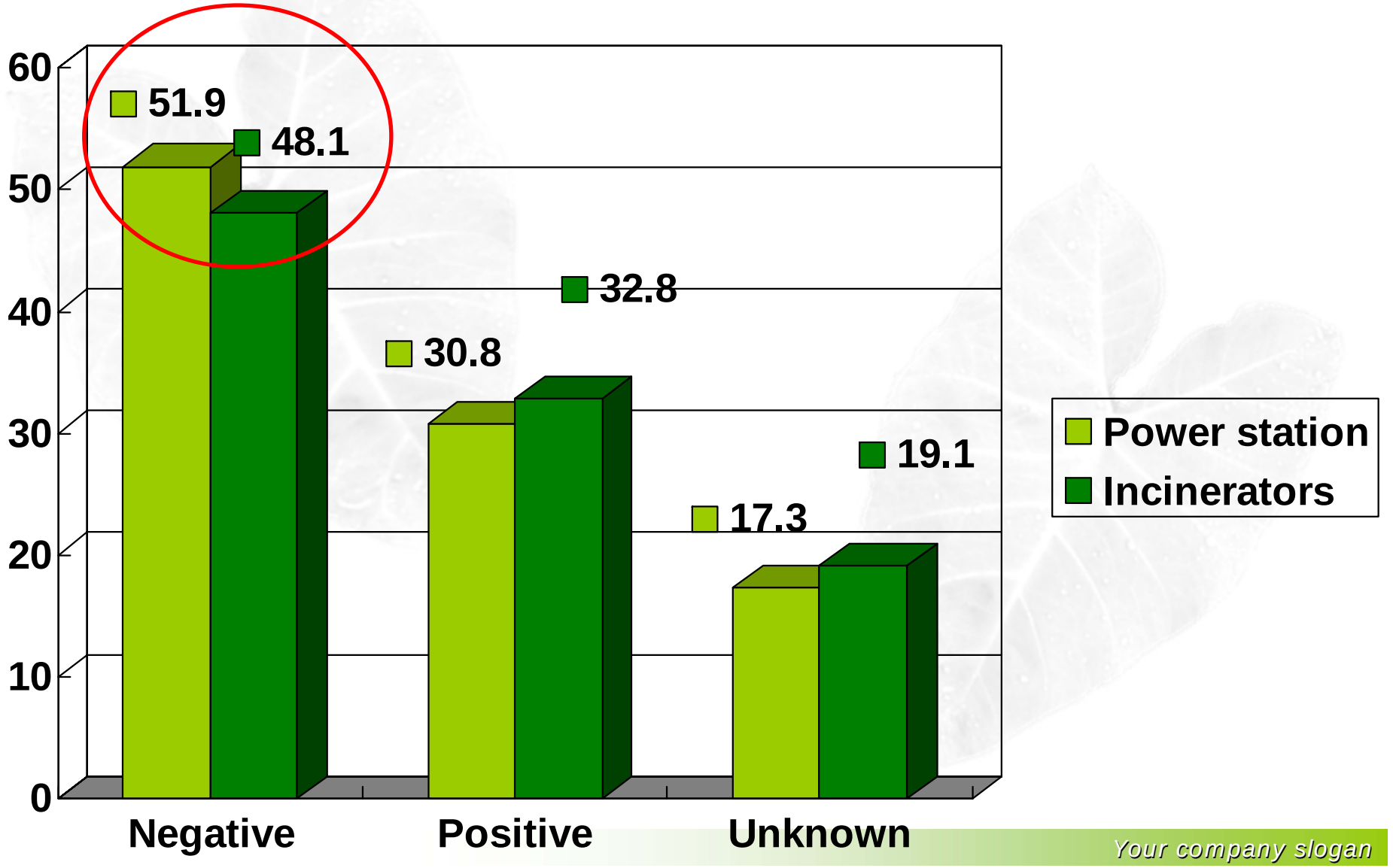
Empirical Results

- **1. The existence of NIMBY syndrome**
  - **(1) The "*welcome*" indicator: This describes the local reaction of the LULU facilities being sited in the community.**
  - **(2) The "*favor*" indicator: This describes whether the local community favored or disfavored the site decision.**
  - **(3) The "*fairness*" indicator: This describes whether the decision to site the LULU facilities in the local community was made in a fair way.**
- **All three indicators -- "welcome," "favor," and "fairness" – showed a negative trend, thereby confirming that LULU syndrome existed.**

Table 3 Survey results on the existence of LULU Syndrome

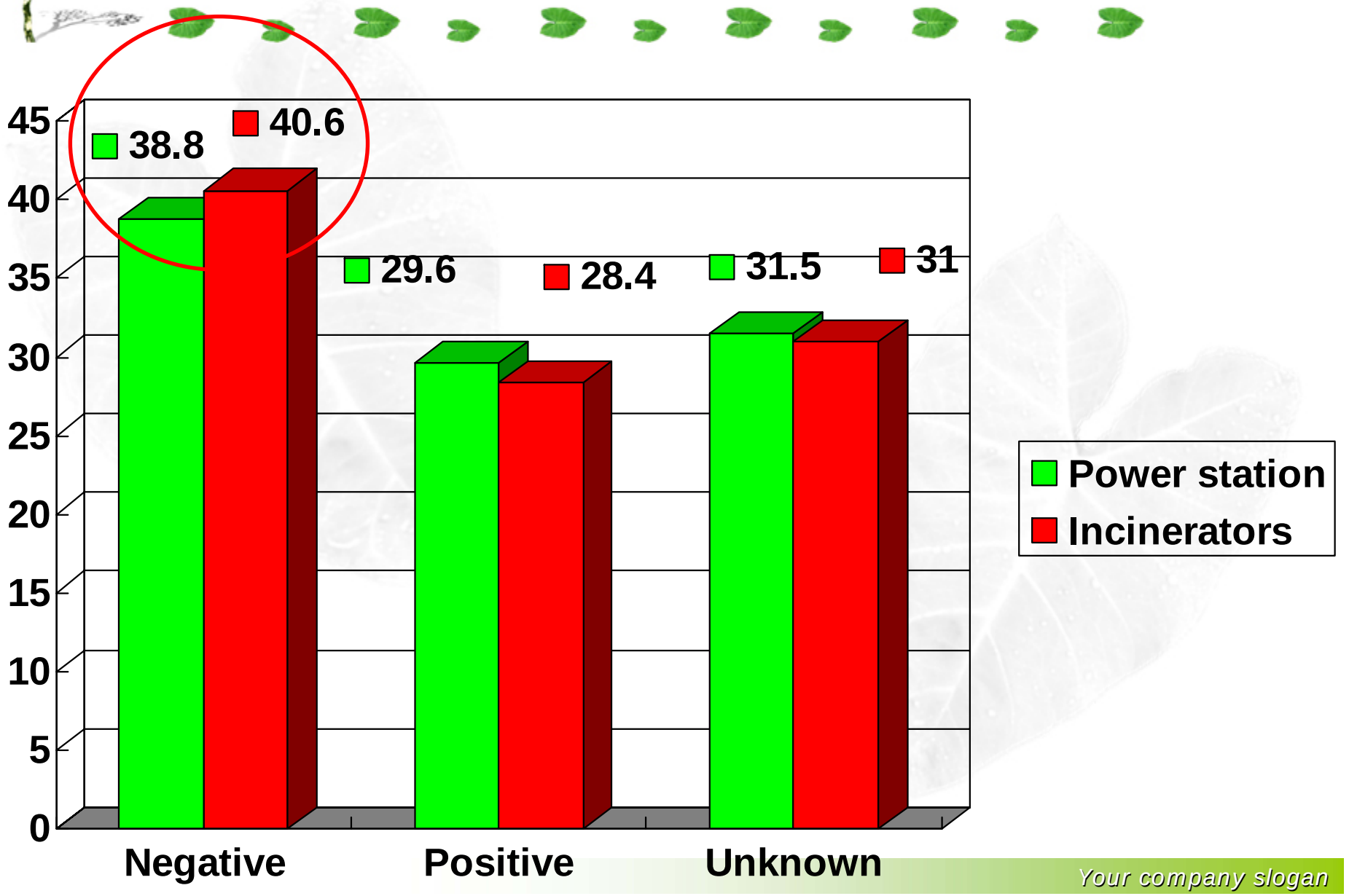
1. The *"welcome"* indicator: *Did you welcome the site here or not?*					
	Very Unwelcome	Unwelcome	Welcome	Very Welcome	Unknown
Power station	21.9%(57)	30%(78)	28.1%(73)	2.7%(7)	17.3%(45)
Incinerators	17.9%(137)	30.2%(231)	30.6%(234)	2.2%(17)	19.1%(146)
2. The *"favor"* indicator: *Did you favor the site here or not?*					
	Very Unwelcome	Unwelcome	Welcome	Very Welcome	Unknown
Power station	25.4%(66)	32.7%(85)	19.6%(51)	3.1%(8)	19.2%(50)
Incinerators	22.2%(170)	34.8%(266)	24.3%(186)	1.3%(10)	17.4%(133)
3 The *"fairness"* indicator: *Did you feel that it is fair or unfair for the site to be here?*					
	Very unfair	Unfair	Fair	Very Fair	Unknown
Power station	13.8%(36)	25%(65)	26.5%(69)	3.1%(8)	31.5%(82)
Incinerators	16.2%(124)	24.4%(187)	26.8%(205)	1.6%(12)	31%(237)

The “welcome” indicator:
Did you welcome the site here or not?



The “favor” indicator:
Did you favor the site here or not?

The “fairness” indicator: Did you feel that it is fair or unfair for the site to be here?



- **2. Economic Factors Contributing to LULUs**
- **(1) Health and Property Concerns**
- **Regarding the health and safety risks, the residents acknowledged that the establishment of an electric power plant would carry low risk. However, they felt that there was a great risk to real estate values and agricultural production. Therefore, we could conclude that the residents' negative attitude towards the power plant chiefly concerned their property than their life.**

Table 4 Survey results on health and property concerns

	Many ill effects	Some ill effects	A bit of ill effect	Totally no ill effect	Unknown
1. The power stations (incinerators) set here, would it affect your health or not?					
Power station	14.2%(37)	27.7%(72)	36.5%(95)	10.4%(27)	11.2%(29)
Incinerator	19.3%(148)	25.4%(194)	36.7%(281)	10.6%(81)	8%(61)
2. The power stations (incinerators) set here; does it affect your property value?					
Power station	21.5%(56)	30.4%(79)	27.3%(71)	11.5%(30)	9.2%(24)
Incinerator	23.4%(179)	23.8%(182)	25.6%(196)	11.8%(90)	15.4%(118)
3. The power stations (incinerators) set here; does it affect your agricultural production?					
Power station	15.4%(40)	31.9%(83)	23.1%(60)	8.1%(21)	21.5%(56)
Incinerator	14.6%(112)	18.4%(141)	18%(138)	8.9%(68)	40%(306)

(2) Compensation of Environmental Effects

- The most common form of compensation that local residents require is a reduction in the electric bill (31.2% and 34.6%);
- the second most common was the construction of public welfare facilities, such as parks and other recreational facilities (25% and 17.9%) for electric power stations and solid waste incinerators;
- and others asked for direct monetary compensation (13.8% and 11.3%).
- Therefore, in this case study, taking deductions off residents' electric bills was the major consideration for mitigating confrontation (Table 6).

Table 6 The most favorable compensation ways

Types of compensation ways	Power stations	incinerators
Pay cash	13.8	11.3
Offer job opportunities	7.3	10.4
Support public facilities	25.0	17.9
Omit electric bill	31.2	34.6
Give scholarships	1.9	7.9
Community activities	1.5	6.8
Recipients for public assistance	7.3	11.0

Solid Waste incinerator in Taipei

Incinerator at Night

colorful Chimney

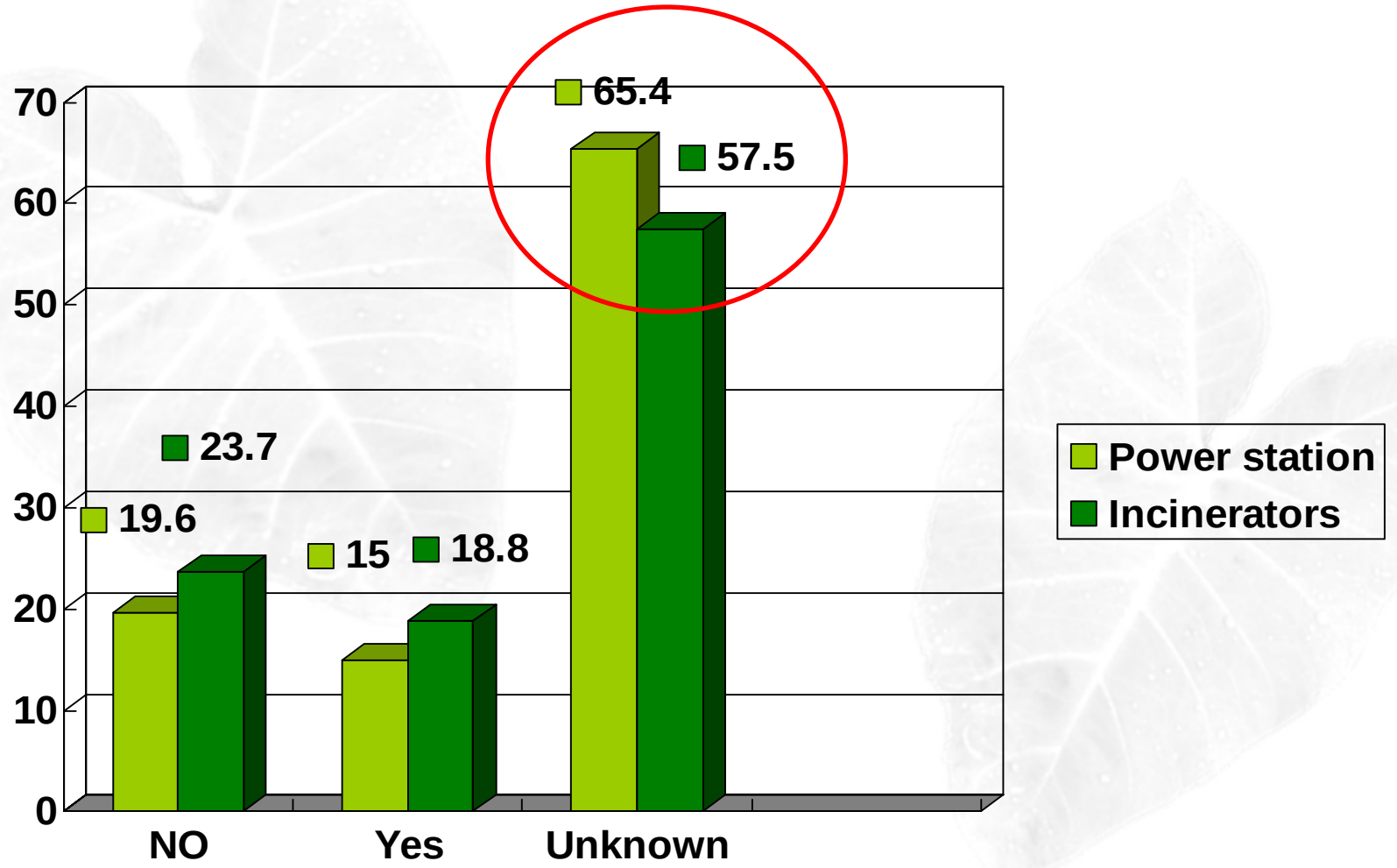
Observatory in incinerator's chimney

Swimming pool

Level of satisfaction for compensation

- The LULU facilities are set here; are you satisfactory the compensation?
- Only 15% of the participants in the power station and 18.8% of the participants in the site of solid waste incinerators are satisfactory with the compensation.
- The very high proportion, 65.4% and 57.5%, respectively, of the residents do not have any common. It seems that the residents around the LULUs do not have positive evaluation on the compensation by the vendors.

The site set here; are you satisfactory the compensation?



- **(3) Quality of Life Concerns**
- **According to the survey results, 58.9% of the participants recognized that these ill effects would have a most detestable effect on the quality of life. Within this figure, 54.8% considered air pollution to be the most intolerable, followed by water pollution (16.5%) and electromagnetic field pollution (12.9%) (Table 7).**

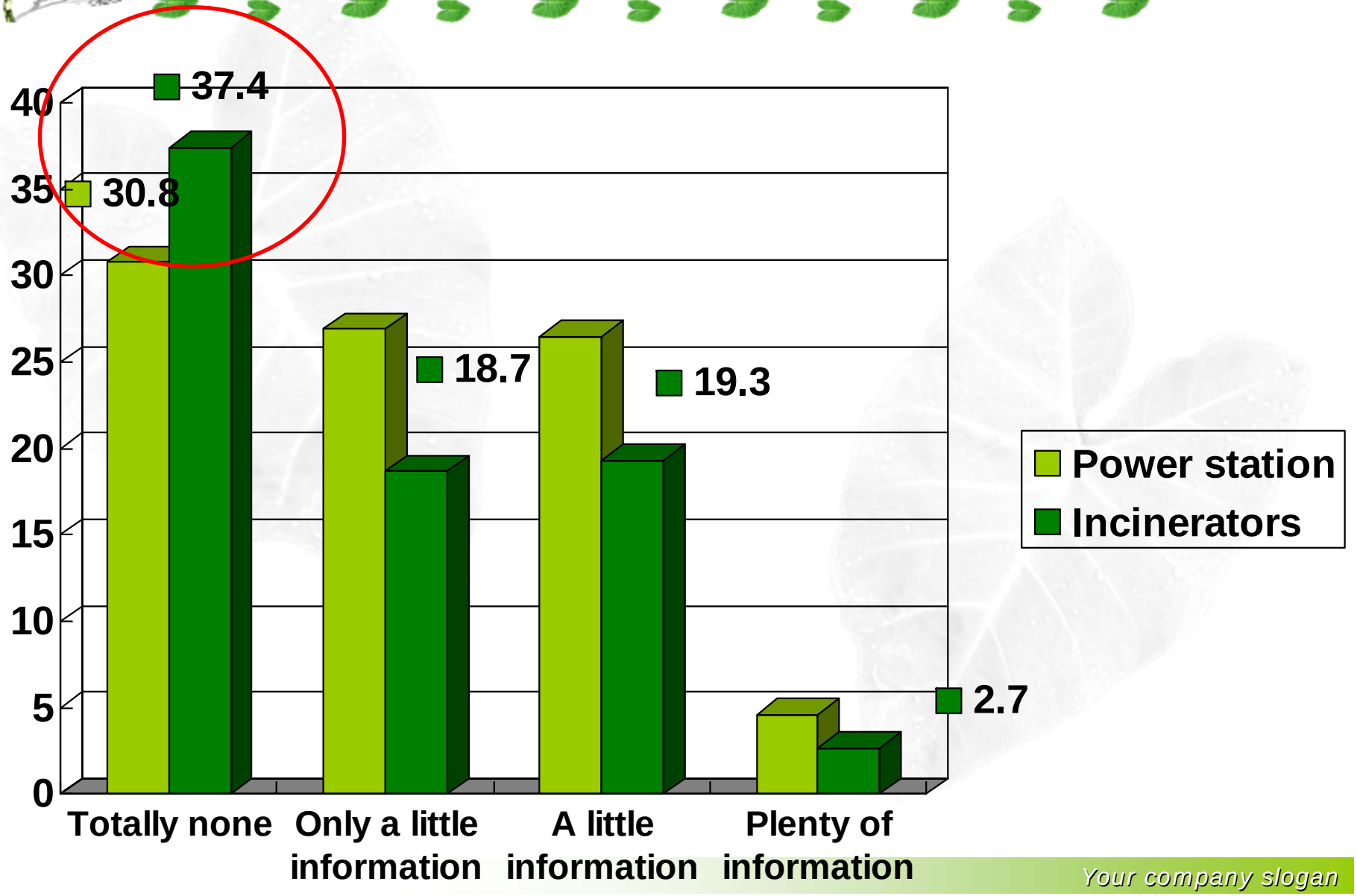
Table 7 The most detestable pollution

Types of pollution	%
Electromagnetic field pollution	12.9
Noise and vibration pollution	6.6
Scenic pollution	2.8
Water pollution	16.5
Air pollution	54.8
Others	6.3

3. Noneconomic Factors Contributing to LULUs

- **(4) Lack of public participation**
  - (a) 59.2% and 79% in the sites of power station and incinerators were never notified of the hearing or participated in the hearing;
  - (b) 95.4% and 97.3% of local people indicated that the vendors did not have detailed information; or only a little bit of information was provided, 4.6% and 2.7%, respectively for power stations and incinerators.

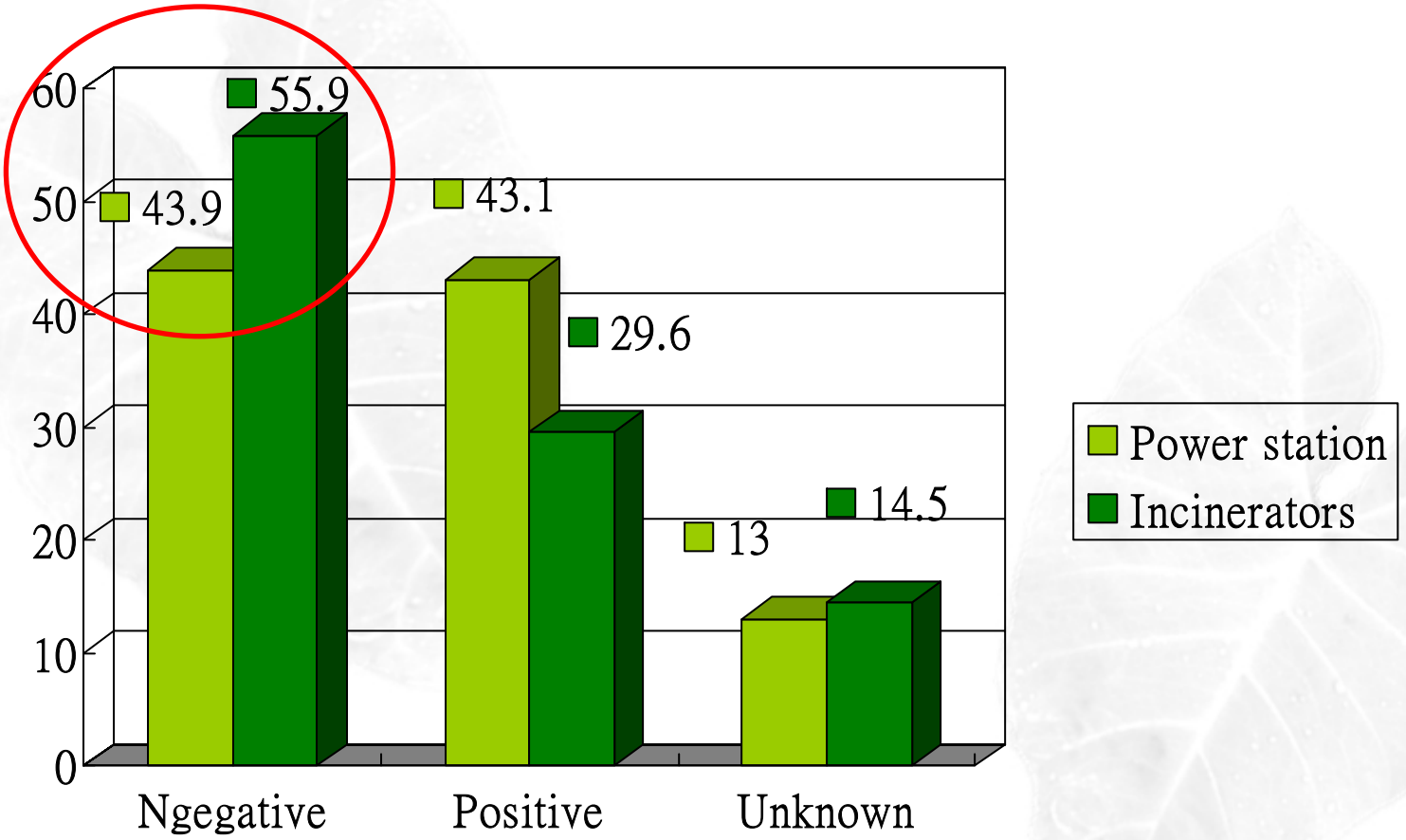
The site set here; did they provide detailed information?



- 46.6% and 55% of the participants in power stations and incinerators accepted the policy, and 38.5% and 33.9% were opposed to the policy, respectively. When we further asked those opposed why they rejected the policy, their answers were they thought the power plant and incinerators construction required specialized knowledge and therefore indicated that they did not have the ability to make the decision.

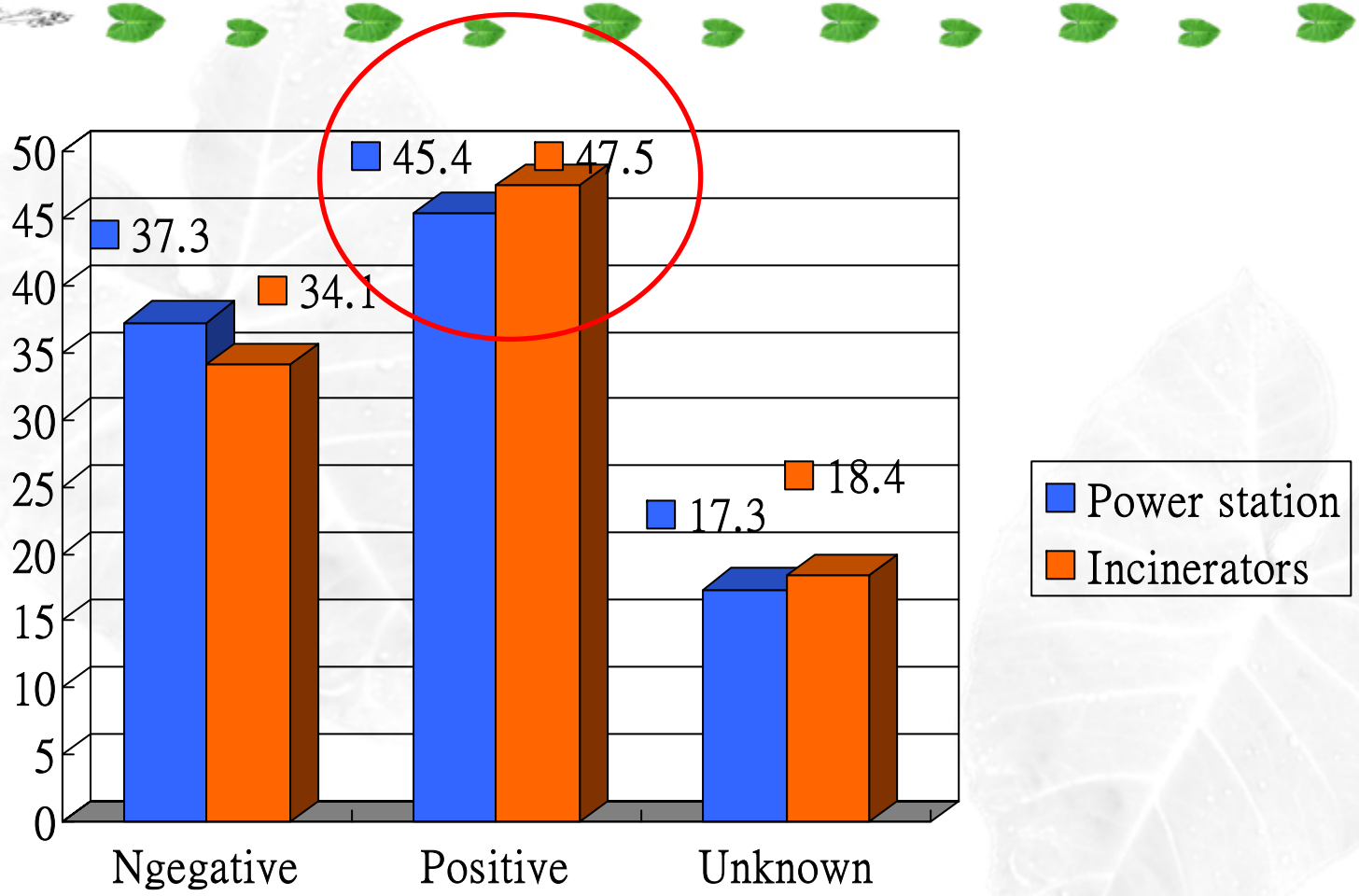
- **(5) The problem of credibility gap**
- **(a) 43.8% and 55.9% of the participants in the sites of LULUs did not trust that the power plant and incinerators had a sincere attitude towards improving welfare or prosperity of the community. This figure was equal to the number of participants that trusted the vendor.**

The plant set here; did the plant have the sincerity to improve the local community's prosperity?



- **(b) 37.3% and 34.1%of the participants in the sites of LULUs did not believe the vendor had a sincere attitude towards improving the pollution and safety issues. 45.4% and 47.5% thought that the result was quite mixed.**

The plant set here; did the plant have the sincerity to resolve the pollution and safety issues?



- **(6) Problem of local factions**
- **According to the survey report, 30% of the participants had experienced or heard of this phenomenon.**
- **55% of participants thought that politicians had a hand in the outcomes.**
- **These results suggest that underground situation today is still a serious problem.**

Conclusion: Breaking Through Gridlock of LULU Syndrome

- On the basis of two types of factors, economic/noneconomic, are contributing to successful LULU sites, we offer three approaches, i.e. government-regulatory, market-based and community governance strategies.
- 1. Government regulatory strategies:
- (a) the government can force the plants to sponsor free health check-ups for the host community; (b) the government can monitor the land values and usage in the vicinity of the high voltage tower and confiscate it if necessary to see that the people are fairly compensated to avoid any further monetary conflict.

- **2. The Market-based Strategy:**
- It is quite impossible to pass the law of NIMBY taxes in Legislative body in Taiwan currently.
- Inhaber (1998)'s auction strategies and Mazmanian and Morell (1994)'s siting contract approach are not workable in Taiwan.
- Actually, a 'gentlemen agreement,' an informal and mutual agreement between representatives of the host community and vendors of LULU facilities based upon volunteered and negotiated, is encouraged by the Environmental Protection Administration, the Executive Yuan.

- **3. Community participatory strategies:**
- **First, we have to assess the effects on the environment, organize a hearing and make it a legal process. Second, we have to realize the executive legal procedure about the hearing and broadly disseminate and disclose the information to the public. Third, we have to establish the referendum guidelines, allowing the host community to have the right to vote in the referendum.**

- **(2) The strategy to settle the credibility gap. The government procedure has to settle the power plant vendor's neighborhood dispute publicly and openly and carry it out in a legal manner. The implementation of this strategy relies on a clear and effective communication between the government, the vendor and the host community.**

- The politicization problem in site selection tends to be the hardest factor in the NIMBY syndrome to settle. The local officials that lead the community into confrontation with the central government's public facility's policy usually act as the NIMBY group's leader, forgetting that their duty is to execute the policy. These local leaders should obey the central government's directives but instead, choose to lead the people into serious confrontations to show that they "stand with the people. "

- The reason is quite obvious. Because the people elect them, they are obligated to represent them. If they seek reelection, they also are under pressure to realize the promises they made to their constituents. Therefore, this becomes a phenomenon of populism. This is the toughest challenge for Taiwan’s government policy makers and urban planners.


Thank You so much