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一、 請閱讀下列三則網路文章後,<u>以中文</u>回答下列問題: (50%) 文章一 (資料來源: http://e-info.org.tw/node/96083) 苗栗苑裡反風車?風力發電部分機組距離民宅過近問題

(其實一句話就講完主要爭議了: 苗栗縣苑裡地區居民, 認為英華威公司預定要蓋的風機距離他們居住的民宅太近, 不符合到世界上各國平均 470 到 700 公尺左右的最低距離, 因此抗議要求業者停工重新評估, 並要求政府修法明訂安全距離。)

首先要釐清的是,他們到底在反對甚麼?細看訴求,他們並非反風力發電、反綠能科技、反環保——其實,在苑裡反瘋車自救會臉書粉絲頁的封面照片上,明寫了「我深愛這片土地,我也反核」。如同苦勞網記者孫窮理的報導:「居民反對風機設置的主要原因是「噪音」,而直接影響噪音的因素,是「距離」」。根據自救會蒐集的資料(美國明尼蘇達州商業部 EFP 整理的「各國風力發電政策管制與建議」,2011年),國際間風力發電機組設置的安全距離,均達 470 公尺以上。但是,德商英華威公司的機組預定地,有些離通宵、苑裡的某些聚落甚至還不到200公尺!

那麼,這會造成甚麼後果? 苑裡居民以後龍等地居民所患的「風車症」舉證控訴。而這在醫學上確實並非「空穴來風」,我查到一篇今年三月甫刊登於國際知名醫學期刊《喉科學與耳科學》(The Journal of Laryngology & Otology)熱騰騰的回顧性論文,題目就叫〈風車症候群:事實或虛構?〉('Wind turbine syndrome': fact or fiction?)。作者是兩位耳鼻喉頭頸外科和一位神經外科醫師,他們回顧了近十年的相關文獻後發現:確實有證據指出,暴露在風車造成的低頻音波(infrasound)中的人,可能會對耳部引起特定的生理反應,包括耳鳴(tinnitus)、耳痛和眩暈症(vertigo);這與令人不悅的噪音所帶來的壓力也有關連。雖然他們也認為這項議題在醫學上還有一些尚待探索的部分,但光是這些已知的部份,已足可構成苑裡居民捍衛自身健康的理由。所以,如果你也反對把核廢料傾倒在蘭嶼,反對六輕對雲林麥寮人造成的健康風險提升,你應該有同樣的理由關注,而且反對這項開發案。本案主要問題有二:

- 1. 風車太近了: 與國際平均的安全距離 470-700 公尺相比, 苑裡風車與住戶的距離只有 60-250 公尺。低頻噪音將造成附近居民的風車症。
- 2. 環評有瑕疵: 英華威苑裡風場三年未開發, 法定程序上應重送審查卻未送,

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而增設機組必須重送環評,卻利用結合計畫規避。

【我們的訴求】

一、立即停工,英華威出來面對苑裡鄉親:

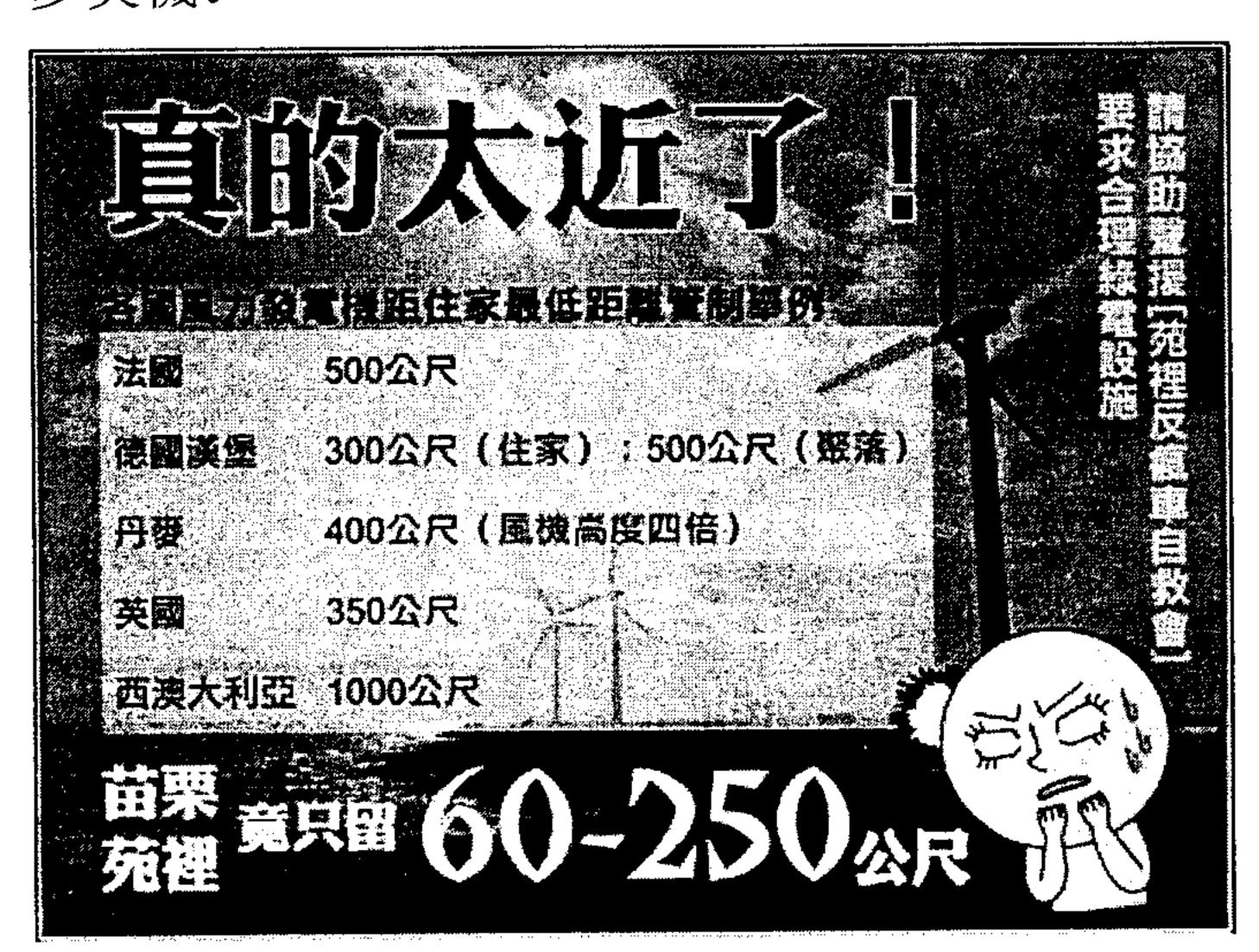
英華威在苑裡的風機工程,應立即停工,重新與苑裡鄉親協商,充分向苑裡鄉親 說明風車設置會造成的影響,並且徹底尊重苑裡鄉親的意見,不得再以黑箱作業 的方式強行施工,犧牲工程的安全與苑裡人的身體健康。

二、環評違法,環保署應要求英華威重作環評:

英華威提出的環評報告明顯違法,環保署應該要求英華威重作環評,在環評報告通過之前應要求英華威公司不得繼續施工。

三、經濟部應訂定風機安全距離,保障人民安全:

經濟部能源局應制訂風機設置的相關規範,明確訂定風機距離民宅的距離,在規範制定完成前,應勒令英華威立即停工,莫讓惡質的財團斷送台灣在生能源的進步契機。



一、風車蓋太近!

根據美國明尼蘇達州商業部 EFP 整理的「各國風力發電政策管制與建議」 (2011),各國有管制或建議風力發電機組設置距離者,最低下限平均約 470 公尺,最高下限平均則是 700 公尺,換句話說,一般國際標準的最低安全距離,至少應有 470-700 公尺。但是,英華威公司在苗栗苑裡的開發計畫中,「50 號風機離五北里聚落 174 公尺, 40 號機離苑港里聚落 192 公尺,53 號機離西平里出水聚落 215 公尺。」顯然遠遠不及國際標準。甚至,還有農民住在距離風車不到60 公尺的地方,但是農用住宅卻被認定為「違章建築」,因而在英華威的開發計畫中沒有納入,因而也不受環境影響評估的監督。

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二、環評有瑕疵!

律師林三加指出,苑裡的風力發電開發計畫,環評通過超越三年都沒有開發,如果要持續開發,依據《環評法》第 16-1 條「開發單位於通過環境影響說明書或評估書審查,並取得目的事業主管機關核發之開發許可後,逾三年始實施開發行為時,應提出環境現況差異分析及對策檢討報告,送主管機關審查。主管機關未完成審查前,不得實施開發行為。」但是,英華威根本沒有提「環境現況差異分析及對策檢討報告」。卻另外提出計畫要在竹南增設「3 個機組及 1 個電網併聯點」,這時,竹南原本只有 5 個機組,根據《環評法》第 16 條(《開發行為應實施環境影響評估細目及範圍認定標準》第 3 條,因為符合「(十) 擴增產能百分之十以上。」,必須重作環評,但卻沒有做。根本瑕疵在於「英華威把「竹南」和「通苑」兩個風場綁在一起送環評,苑裡這邊是 3 年沒動沒錯,可是竹南那邊有動,而如果單單算通苑風場的 26 座機組,增加 3 個機組後產能擴增了 10%以上沒錯,但一加計竹南,變成 31 座機組,就不到 10%了」等於是藉由結合計畫來規避還評。(苦勞網,2013-04-13,風車太近 苑裡居民絕食滿一週 英華威惡搞綠能 恐斷送進步契機)

文章二:資料來源: http://e-info.org.tw/node/96083
發展綠能,請先完善評估:給苑裡風機的一封信
作者:高梅婷、周均珈、陳威宇(成功大學生命科學所碩士生)

我們是就讀國立成功大學生命科學系的三位研究生,我們希望透過這封信,表達對於苑裡設立風力發電機的立場與擔憂。我們認同相較於火力和核能發電,風力發電不需使用燃料、和排放較少的溫室氣體,是對環境較友善的一項永續能源。在國際間,風力發電也已被許多國家視為發電的主要產能之一。基於上述優點,我們支持建造風力發電機。然而,我們擔心未經全面評估就建立的風力發電機,會破壞當地的環境地貌與許多生物的棲地、擾亂生物的正常行為,造成陸域與水域生態系的破壞,甚至影響當地居民的身心健康。而這也是許多居民與環保團體倍感憂心,甚至大力反彈的主因。

台灣因為特殊的地貌與地理位置,提供許多生物及候鳥定居、渡冬,也因此讓我們有機會欣賞各式各樣的生物。台灣不僅僅是台灣人的家,也是許多生物賴以生存的家。既然使用風力發電機的目標是「保護環境」,就應該貫徹理念,做好完善評估,避免破壞環境與生物棲所的問題。我們基於「保護環境」這項理念與擔憂風機造成的危害,經過蒐集國際間許多案例及研究,提出以下建議事項及設置要點,慎重呼籲決策方能考量這些建議,再次檢視所有待建造(苑裡風力發電機)

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與使用中風力發電機的合適性,給予必需的修正。建設前的評估:

- 1. 風機的設置地點與設計應優先考量減少碰撞風險。
- 2. 設置風機時,風機的葉片長度、高度、排列方式 (線性、或是塊狀分佈)、 與棲地間的距離,必須配合當地候鳥遷徙路徑及留鳥活動範圍和習慣。
- 3. 預留或設立動物飛行廊道,引導飛行動物在風機周圍移動,而非在風機間穿 梭。
- 4. 適當地加強風機外觀與環境間的對比性,幫助動物提早發現風機的存在。
- 5. 減少飛行動物受昆蟲吸引前來覓食的機會。
- 6. 風機架設位置應與居民保持適當距離,以減低對居民的身心影響。

建設後的監控與管理:

- 1. 開發相關的監測系統,持續監控該地區出現的動物,記錄飛行方向及活動路徑,並在風力發電機運作期間,提供日後進行修正或模擬預測所需資訊。
- 當風力發電機的運作可能嚴重影響動物活動時 (如:鳥類遷徙季節),應暫時停止運轉遷徙路徑上的風機,減少誤擊的可能。
- 3. 當風力發電機的運作將嚴重危害當地動物生存 (具有造成物種族群低於有效族群量的風險),應立即停止風力發電機的運轉。

我們希望以環境保護的角度,提供一個新的思維,並企圖達成維護當地居民健康、維持當地生態環境、與發展綠色能源,三者兼顧的局面。

文章三、苑裡風場破解謠言 Q&A

資料來源: http://www.infra-vest.com/TC/news-130502B.htm

Q1:有些苗栗苑裡居民提出,風機離民宅太近,而且距離只有60公尺,會嚴重影響居民生活品質。風機離民宅的距離真有那麼近嗎?事前沒有勘查情況嗎?

A 1: 在本公司規劃的苑裡風場中,附近 60 公尺處並沒有民宅。經我們進一步了解,有人提出距風機 60 公尺的民宅,座落在編號 23 號風機附近,可是經查詢苗栗縣門牌查詢系統及套繪空照圖後,發現為「查無登記門牌」之情形,現場沒有,空照圖也沒有這戶人家。

本公司在目前規劃的苑裡風場中,大部份風機是遠離民宅的,少數幾台附近有零星的民宅,最近的距離在250公尺左右,而非如報導所述的60公尺或110公尺。Q2:有一些人指出,風力發電的確是再生能源的一種,也是大家希望台灣加以利用的發電方式之一,但是如果太靠近大型風車,會因為長期的低頻噪音,產生

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所謂的「風車症」,因此德國規定大型風車設置地點必須距離居民居住地 1500 公尺以上,但在台灣,卻有近至 250 公尺的,到底法律的規定為何?

A 2:德國或大部份國家並沒有規定風機與民宅的規定,而是以噪音規範定之;例如,在德國視不同區域有噪音規定是 35-45 分貝,故視風機數量以及容量推算起來風機(或風場)與居住聚落的距離,會落在 300-1500 公尺。在台灣視不同區域,噪音規定,日間在 50-80 分貝,推算與風機的距離則在 150 米以內,而在苑理規劃的風機都遠比 150 米要遠得多。另外,本公司有距風機 160 米實測的數據,亦在法定的標準範圍內(參見附表)。台灣有關 250 公尺的規定,指的是環評要求在風機 250 公尺內有民宅者,必須進行環評;還有能源局有要求在施工前要挨家挨戶發通知給 250 公尺的民宅,通知開會。

以本集團台中、大豐風場之營運期間一般噪音監測結果為例

| 監測點 | 建興 | | | | 建興二 | | 回心子 | | | | 管制標 |
|-------|------------------|------|-------|------|-----------|------|--------------------|------|-------|------|-----|
| 距離風機之 | 285 公尺(距#28 號風機) | | | | 160 公尺(距 | | 335 公尺(距#36-2 號風機) | | | | 準 |
| 距離 | | | | | #32A 號風機) | | | | | | |
| 監測日期 | 101年 | | | 102 | 101 | 102 | | | | 102 | 第三類 |
| | | | | 年 | 年 | 年 | | | | 年 | 工廠 |
| | 6/25 | 8/30 | 12/10 | 1/21 | 12/27 | 1/21 | 6/25 | 8/30 | 12/10 | 1/21 | |
| 一般噪音 | | | | | | | | | | | |
| L1 | 51.3 | 59.1 | 50 | 49.6 | 48.4 | 40.2 | 42.9 | 61 | 45.9 | 50.8 | 70 |
| L2 | 48.9 | 46.9 | 39.6 | 38.3 | 39.8 | 35.4 | 39.3 | 36.9 | 40.4 | 33.9 | 60 |
| L3 | 43.1 | 45.5 | 38 | 38.2 | 38.5 | 43.2 | 34.6 | 30.2 | 41.3 | 31.9 | 55 |

備註:管制區標準類屬資料來源:台中市環境保護局網站公告,單位為分貝。

- Q3: 苑裡漁民還提出, 苑港的高經濟價值漁獲鰻苗會被風車的噪音毀了, 因為鰻魚生性容易緊張, 對噪音、水溫與強光均十分敏感, 長期而持續的風車低頻噪音的確可能造成鰻苗與其他近海生物的遷移或死亡, 形成苑港漁港與漁民的生存危機。
- A 3:本公司目前在苑裡規劃的風機,應不致於影響苑港的高經濟價值漁獲鰻苗,若苑裡漁民果有此擔憂,本公司也十分願意就事論事地予以溝通了解。在這半年來,本公司已在苑理以及台北開過數次協調會,並沒有機會聽到居民當面向本公司提出來這方面的疑慮,我們是很願意協調解決居民的疑慮的。
- Q4: 先前辦的公聽會,有當地居民質疑是黑箱作業,還指控有偽造同意書的情況,可以說明一下嗎?
- A 4: 本公司從 2000 年開始開發本案, 這十多年來因環評程序、縣府以及能源

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局的要求,都有開過許多次公聽會,每次的公聽會本公司都依照相關規定進行,發通知邀請鄉親來開會,無所謂黑箱作業。

- Q5: 為什麼不和當地居民充份溝通,好好理性解決,明明環評過關一切合法,如今卻抗議越演越烈,你們的想法是?
- A 5: 從去年 10 月底開工,開始有人抗爭,本公司一再試圖協調(相關協調過程紀錄表請參<u>苑裡風場破通威公司苑裡風場地方說明會及協調會紀要</u>單元),也數度停工,例如去年 12 月 4 日開協調會後,本公司就停工,期盼能和當地居民充份溝通,好好理性解決,不斷地發函請求自救會與本公司開協調會,被自救會一再拒絕,最後只好於停工 11 周後,2 月 18 日復工,而被抗爭阻礙。
- <u>從12月4日至今(五月中旬)24周,我們停工近18周,</u>足見我們對尋求溝通的善意。
- Q6:還有當地居民提到海岸線2公里就有14座風力發電機組,密度過高,也很不好看,更會造成鳥類生態危機,甚至有淤泥的問題出現,真會發生這個情況嗎?
- A 6:在目前的苑裡 3.5 公里的海岸線上,本公司已經取得核可的有六台,還在申設程序中的有八台,若苑裡居民並不歡迎,本公司也會將居民的意見納入考量,考慮不再繼續申設。至於好不好看是件見仁見智的事我們過去經常看見有人在附近的風場進行婚紗照拍攝,應該沒有人會去旁邊的通霄火力電廠拍攝婚紗照,這應該反映起碼有一些民眾對於風車的喜愛。

至於鳥類生態危機,我們也很重視此議題,過去曾在此地區進行過環評的鳥類監測。由於在苑裡北邊不遠處有通霄火力電廠,而且苑理沿海樹林並不多,農田也不多,所以所能監測到的鳥類並不多。而且風機轉速不快,並不致於讓鳥類造成危險;也有研究顯示,鳥兒夠聰明,會自行避開風機飛行。

風機造成淤泥的問題?應該不至於。在國際上對風電也有過一些疑慮,但是目前還沒有聽過 "風機造成淤泥"的說法。我們初步評估,在台灣因興建海堤以及漁港造成的突堤效應,而致淤泥的問題,這在風機並不成立,因為風機基座所占面積極小,不像海堤以及漁港的大範圍。在目前在台灣已架設超過300多台的風機,都是位於海岸邊,目前我們並未發現有因風機造成淤泥的問題。

問題: (請在回答問題後,在相關陳述之重點,劃上底線。)

- (一) 針對這三篇文章中,雙方所討論之爭議點(如:居民健康、生命安全、國家綠能發展、環境影響等),請以可理解之方式,作列舉與爭點之整理。(15%)
- (二)你的觀點:從上述討論,你認為設置風力機與民宅間<u>「安全」距離</u>,背後之主要考量為何?你的立場,是支持還是反對?支持或反對之理由為何? (20%)

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共_11_頁,第_7__頁 *請在【答案卷、卡】作答

- (三)整體而言,你讀完這三篇文章,對於**風力發電發展之想法**,以及**風力發 展之法制規劃**,有何感想與心得,請簡要**列點**分享之?(15%)
- 二、請閱讀以下文章,並以中文回答問題: (20%)

(University Of Chicago News Office, September 2, 2013, with certain modification)
Ronald H. Coase, Founding Scholar in Law and Economics, 1910-2013
By Sarah Galer and Jeremy Manier

Ronald H. Coase helped create the field of law and economics, through groundbreaking scholarship that earned him the 1991 Nobel Memorial Prize in Economics and through his far-reaching influence as a journal editor. Coase, who spent most of his academic career at the University of Chicago Law School, died at the age of 102 on Sept. 2 at St. Joseph's Hospital in Chicago. He was the oldest living Nobel laureate, according to the Nobel Foundation.

Coase, the Clifton R. Musser Professor Emeritus of Economics, is best known for his 1937 paper, "The Nature of the Firm," which offered groundbreaking insights about why firms exist and established the field of transaction cost economics, and "The Problem of Social Cost," published in 1960, which is widely considered to be the seminal work in the field of law and economics. The latter set out what is now known as the Coase Theorem, which holds that under conditions of perfect competition, private and social costs are equal.

. . .

"Ronald Coase achieved what most academics can only dream of – immortality," said Michael H. Schill, dean of the University of Chicago Law School. "His scholarship fundamentally changed the way lawyers approach issues of when and how government should intervene in the economy, and when and how private contracts should govern. His work could not be more relevant to many of the debates we are enmeshed in today.

. . .

Coase's enduring legacy at the University of Chicago is reflected in the Law School's Coase-Sandor Institute for Law and Economics, named in honor of Coase and donors Richard and Ellen Sandor, who gave UChicago \$10 million in support of law and economics scholarship.

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"Ronald Coase inspired a new way of thinking about law and about the application of economics," said Omri Ben-Shahar, the Leo and Eileen Herzel Professor of Law and Kearney Director of the Coase-Sandor Institute. "His insights are simple but at the same time profound. They are accessible to first-year students, and their implications continue to provoke cutting-edge research. We will continue to develop the field that he inspired, and to build on the vitality of his ideas."

"Professor Coase's research on property rights provided the academic underpinning for the establishment of the Acid Rain Program in the United States in the early 1990s, which virtually eliminated acid rain pollution in America," said Richard Sandor, chairman and chief executive officer of Environmental Financial Products, LLC. "Personally, he has been a source of inspiration and mentoring to me for over 40 years. Professor Coase provided me with unwavering intellectual support to carry on my ideas as both an academic and a practitioner.

. . .

Coase graduated from the London School of Economics with a B.Com. in economics in 1932 after spending his final year of studies in the United States on a Sir Ernest Cassel Traveling Scholarship. During that year abroad, he focused on the structure of American automotive industry and why some work was performed inside firms and some by the marketplace. These ideas became the basis of "The Nature of the Firm."

Sir Arnold Plant, a British economist at the London School of Economics, was a major influence on Coase while he was a student there. Until meeting him in his senior year, Coase had never taken an economics course, only accounting and business. Plant introduced Coase to Adam Smith's "invisible hand" and to the idea that competitive economic systems could be coordinated by the pricing system. In an autobiographical essay written for the Nobel organization, Coase writes that Plant "changed my life," influencing his ideas, helping his achieve the Cassel Traveling Scholarship and setting him on the path to becoming an economist. "My life has been a lucky chance at all points," Coase said in a 2012 interview with the UChicago News Office.

Coase believed the incentives of private parties to resolve disputes in their own best interests, even if there needs to be adjudication by courts, should result in an efficient,

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mutually beneficial solution that is always preferable to government intervention. This theory, known as the Coase Theorem, has been applied to such issues as the sale of rights to broadcast on portions of the electromagnetic spectrum and the problem of pollution; while countless other economists have applied it to virtually every area of human activity.

• • •

In his personal essay for Nobel, Coase described being invited to UChicago to defend a 1959 paper he had written on the Federal Communications Commission to a group of skeptical UChicago economists. In that evening gathering at Law School Professor Aaron Director's home, he was able to persuade them to his view that as long as legal rights are properly defined, efficient solutions will prevail. He was asked to write an article for *The Journal of Law and Economics*, which Director had recently founded. The outcome was "The Problem of Social Cost." "Had it not been for the fact that these economists at the University of Chicago thought that I had made an error in my article on The Federal Communications Commission, it is probable that 'The Problem of Social Cost' would never have been written," Coase said

George Stigler, PhD'38, an economist at UChicago and 1982 Nobel Prize winner, later wrote in his 1988 book, Memoirs of an Unregulated Economist, about that night: "We strongly objected to this heresy. Milton Friedman [UChicago economist and 1976 Nobel laureate] did most of the talking, as usual. He also did much of the thinking, as usual. In the course of two hours of argument, the vote went from 21 against and one for Coase to 21 for Coase. "What an exhilarating event! I lamented afterward that we had not had the clairvoyance to tape it."

問題:

- 1.請依據本文,以 100 字以內之篇幅說明 Ronald Coase 的兩篇代表作為何並簡述各自的內容。(10%)
- 2.請依據本文,以 200 字以內之篇幅說明 Ronald Coase 兩篇代表作的創作起因各為何。(10%)
- 三、請閱讀下列文章,並以英文回答問題

Internet's Sad Legacy: No More Secrets (New York Times, December, 2013)

By Nick Bilton

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Anyone who can watch you will watch you. In technology, that is one of the big lessons of 2013. The National Security Agency (NSA) and who knows who else have been tracking this or hacking that. China has been breaking into our computers. Google has been sifting through our home networks. Facebook has been tinkering with its privacy settings. No wonder outfits like Snapchat have exploded onto the scene. They seem to go against the grain, holding out the promise that all those selfies, texts and emails will simply vanish.

Whisper, an "it" app for teens, supposedly lets people share secrets anonymously via smartphone. Telegram is being pitched as the adult version of Snapchat. But the fact is, many services that claim to offer that rarest of digital commodities -- privacy -- don't really deliver. Read the fine print. "Just because information is unavailable to you and you don't see it doesn't mean that it is not being captured, stored, or even seen by someone else in transit," said Edward W. Felten, a professor of computer science and public affairs at Princeton.

Snapchat's privacy page explains that private images are stored on someone's phone -- and on its own servers. "Forensically, even after they are deleted," Snapchat says, those images can be retrieved. Whisper's privacy page says the company owns the intellectual property, both images and text, that people post; Whisper reserves the right to sell that stuff to third parties. And Telegram, while seemingly less innocuous with its claims, nonetheless leaves out something you might want to know: someone can just take a screenshot or picture of that "private" conversation.

"Even if there are all sorts of technical barriers that the disappearing messaging services put up there, someone can just take a picture of the phone," said Kurt Opsahl, a lawyer with the Electronic Frontier Foundation, a civil liberties organization. "If they can see it with their eyes, they can see it with a camera."

In most instances, your Internet service provider or cellphone carrier gets to watch over your shoulder with every click. Even when these messaging apps aren't tracking your chats, the N.S.A. and other government agencies are. They're everywhere. Even people who play fantasy video games like World of Warcraft are being watched, according to documents leaked by Edward J. Snowden. Worse, the snooping doesn't just happen on our desktops and laptops. In our mobile-centric world, it happens

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everywhere. Through our mobile phone, our locations are being corralled and calculated. The N.S.A. can even figure out who we are with by triangulating phones' previous locations.

Don't have a smartphone yet? They still know where you are and where you've been. The American Civil Liberties Union released a report this year that found that technologies that let governments scan license plates are being used to build databases of vehicle locations across the United States. The N.S.A. didn't respond to a request for comment, but the argument by some companies and government groups is that if you're not doing anything wrong and have nothing to hide, then you have nothing to worry about.

It's estimated that there are from 10,000 to 300,000 federal regulations that could be enforced criminally. Mr. Opsahl said we all probably break some of the laws online every day. "There is a tremendous amount of information that is available about every person online and the practical ability for government and private surveillance has never been greater," he said. "What's clear is that tracking technologies have outpaced democratic controls," said Ben Wizner, the director of the Speech, Privacy and Technology Project at the A.C.L.U. "What we've learned this year is that agencies are determined to conduct surveillance on us, and there's not a whole lot we can do about it."

But there is one thing that Mr. Wizner said can and should happen. Technologists are capable of building tools that can prevent such snooping -- "This may be one of those once-in-a-generation moments when we recalibrate the powers of the citizens and the state," Mr. Wizner said. "And that change can happen on the technological side, where the technologists that are disillusioned by the incessant tracking will use their skills to make surveillance more costly."

問題:

- 1. Please summarize this article and do not exceed 500 words. (15%)
- 2. Do you think governments around the world should be allowed to track our activities online, even for national security reasons? (15%)