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Description:	WHPA Supplemental Comments (SNT Pro/Con Arguments) on CEC's Request for the Promotion of Regulatory Compliance in the Installation of Central Air-Conditioning and Heat Pump Systems
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**WHPA Supplemental Comments (SNT Pro/Con Arguments) on CEC's
Request for the Promotion of Regulatory Compliance**

Additional submitted attachment is included below.



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November 19, 2018

VIA CEC Electronic Commenting System
Commissioner Andrew McAllister
California Energy Commission
Docket Unit, MS-4, Docket No. 2017-EBP-01
1516 Ninth Street
Sacramento, CA 95814

RE: Docket 2017-EBP-01: WHPA Supplemental Comments (SNT Pro/Con Arguments) on CEC's Request for the Promotion of Regulatory Compliance in the Installation of Central Air-Conditioning and Heat Pump Systems

Dear Commissioner McAllister:

In follow-up to our [8/20/2018 submitted comments](#), Western HVAC Performance Alliance Inc. (WHPA) respectfully submits the following supplemental Serial Number Tracking (SNT) related comments to the California Energy Commission Docket 2017-EBP-01 for Promotion of Regulatory Compliance in the Installation of Central Air Conditioning and Heat Pumps.

WHPA is a California nonprofit public benefit corporation providing, conducting, and promoting research and education focused on energy efficiency, environmental quality, and sustainability through the HVAC lens. WHPA launched in 2009 in response to the California Energy Efficiency Strategic Plan (CEESP) "to involve high-level HVAC industry stakeholders—such as manufacturers, distributors, and contractors—to coordinate industry sponsorship of and participation in HVAC strategies." Now, restructured as a nonprofit, WHPA continues the work to educate, to drive HVACR energy efficiency initiatives, and to benefit consumers.

WHPA knows all too well the debate on the issue of serial number tracking, as that WHPA was intimately involved with other interested stakeholders in drafting a white paper that explored the pros and cons of a serial number tracking system in California. Unfortunately, the draft white paper was presented to the WHPA governing body in 2015 but was not approved to be released. However, WHPA recognizes that the work and effort put into drafting this white paper is valuable information that would help inform the present dialogue on serial number tracking.

WHPA remains a neutral participant in the discussion around a serial number tracking database for HVACR equipment. WHPA does not take any official position in favor or against the development and implementation of a serial number tracking database in California.

Rather, WHPA provides a brief summary of the work done in 2015 on serial number tracking to educate and aid in the debate. The table on the following pages presents the arguments for and against a serial number tracking database.

Best regards,

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HVAC Serial Number Tracking (SNT) Pro and Con Arguments		
Issue	Arguments FOR SNT	Arguments AGAINST SNT
Potential impact on compliance	Compliance would improve significantly as enforcement agencies would know when a contractor possessed equipment and a permit had not been pulled for that equipment.	The compliance process in California would still be the most burdensome and challenging in the U.S. under a SNT system. The costs to track and verify each unit would significantly outweigh the benefits and enforcement resources would still remain a challenge.
SNT can track when equipment is purchased and if permits are pulled.	HVAC compliance would improve significantly because enforcement agencies would know when a contractor acquired equipment, and be able to subsequently determine whether or not a permit had been pulled for that equipment.	Some contractors “stock” inventory for installation at a later date or for resale. It is not illegal to do so, but the delay between the distributor/contractor transaction and final installation may trigger a “false positive” for non-compliance. Some contractors may purchase equipment or qualifying components within California for installation in another state.
Other states use SNT	SNT system is feasible and achievable as evidenced by other states such as Texas, Oregon, Mississippi, Louisiana and Arkansas that have implemented voluntary small-scale programs.	A mandatory SNT system has never been utilized to verify permit compliance efforts on a statewide level.
Increased out-of-state and internet sales	Increased Out-of-State and internet sales is a minor concern since going to other states doesn’t make sense for most contractors, and distributors would not go along with an illegal supply chain. As for out-of-state internet sales, the SNT system would have an input feature for licensed contractors to be able to add HVAC unit data if shipped directly to the contractor. If the contractor is caught not pulling a	A SNT system could lead to contractors or homeowners acquiring equipment from out-of-state and/or via the internet, thus bypassing any tracking system. A SNT system must track all qualifying products, which enter the state, otherwise there are exploitable loopholes (i.e., internet sales).



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	<p>permit for such a unit, fines can be doubled or s/he could lose his license. Further, cost of shipping alone would negate much of the financial reasons for seeking to circumventing compliance.</p>	<p>Example: If a SNT tracking system collects 100% of the data from 50% of the market, it is only succeeding half of the time. Thus, putting compliant actors at a market disadvantage.</p> <p>Not all unitary equipment and components are sold to installing contractors from entities located within California.</p> <p>An unknown (but likely large) percentage of equipment and components are shipped into the state via regional distribution centers and manufacturers are unaware of which products will be sold within the state at the time the product leaves their possession.</p>
Cost	<p>The cost for the agency or third party overseeing an SNT data base is not expensive.</p> <p>The cost can be reduced further when combined with a statewide online permitting system.</p> <p>One possible cost effective SNT solution would be cloud based. At the time a unit is sold at the distributor, the selling agent would enter the data into a cloud-based system that would require less than 5 minutes of input time making the labor cost involved at this step negligible. There would be no need to modify any other systems at the manufacturer or distributor level since the system is cloud based. This step would tie directly to the current CF1R form and permitting process that</p>	<p>Costs of modifying systems for manufacturers, distributors, and contractors would be prohibitive. Maintaining a database would require sustainable funding and would be difficult and time consuming.</p> <p>Developing, securing, maintaining and utilizing a SNT database would represent a new expenditure for the state.</p> <p>Tracking serial numbers for all products would be a significant change from current industry practices and modifications to inventory management systems that can be costly.</p>



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	<p>already exists. Initial rollout costs could be covered by the public benefits tax fund to implement the system statewide. This would be possible because it directly impacts the number of installed units being permitted, thus making a verifiable market transformation impact on the state goals for energy efficiency through increased compliance making each sale a measurable event.</p> <p>HERS raters and lawfully participating contractors already collect and enter serial numbers as part of the HERS process as required by law. The disconnect is the manufacturers/distributors/suppliers are not participating in the process.</p> <p>At the "point of sale" the tracking would start.</p>	<p>Many distributor software systems do not maintain information such as contractor license number. To modify these systems to collect such information would be a significant cost.</p> <p>Any state managed SNT system must be able to accept data from a large number of sources and alternatives must be provided for companies who cannot provide batch uploads of data to the state.</p>
Enforcement	<p>Enforcement would be much easier overall under this system as equipment could easily be monitored from distributor to installer to final location</p>	<p>The state has a poor record of enforcing code compliance and a SNT system would make this more complex and difficult to enforce.</p> <p>If enforcement is lax, or if loopholes allow for contractors to avoid compliance, then the new regulatory scheme will not be effective.</p>
Fairness	<p>SNT would bring unlicensed handymen out of the dark and re-allocate the equipment and subsequent</p>	<p>It is unfair to add a regulatory burden to manufacturers and distributors for non-compliance at the contractor level.</p>



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	<p>installations to legitimate licensed contractors and force even non-compliant contractors to comply with the law.</p> <p>When it is found that sold equipment has not been permitted and independently verified, then the contractor would be notified that he is noncompliant. The contractor will then be given a fair amount of time to pull permits and provide verification. Failure to do so could result in fines and loss of license.</p> <p>The SNT system creates a level playing field for contractors by taking away the competitive advantage for non-compliance and limiting the ability of distributors to sell to unlicensed individuals. Currently, the laws in CA regulating HVAC installs only apply to those following the laws and that is hugely unfair. SNT would make compliance uniform across all contractors for every installation and virtually eliminate illegal activity and unlicensed practitioners.</p>	
Data protection of consumer, manufacturer and distributor market share	<p>Proprietary sales data would need to be protected and could be done relatively easily. Sales data at the distributor level does not and would not need to include consumer specific information because the information is reported on the state required compliance forms.</p> <p>The only data required at the distributor level would be system specific and would only be used for future matching of install data that is already available on the</p>	<p>Proprietary sales data could be leaked, posing a competitive threat to manufacturers and distributors. Standardizing data collection across all market actors imposes additional costs on manufacturers, distributors and contractors.</p> <p>Industry has significant concerns regarding the sharing of marketplace data.</p>



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	<p>same state required documents. Vital state compliance agencies that already have access to the HERS provider systems and data could easily cross-check the data through the merged systems.</p> <p>Possible measures to ensure data protection include:</p> <ol style="list-style-type: none"> 1. Do not share market data of manufacturers. For example: No direct manufacturer to manufacturer comparison. 2. Do not share market or sales data of distributors. Example: No direct distributor to distributor comparisons. 3. Encrypt the manufacturer and distributor data fields in the unlikely event of a system breach for added protection. 4. All transactions will be done via an encrypted SSL connection with a SSL server configuration rated as an 'A' level by an independent security authority. 5. All user passwords to the system will be a 12-character minimum complex password. 6. Admin access by Building Departments, CEC, CSLB & Utilities will be a 15-character minimum complex password. 	<p>It is easy to identify the manufacturer of a product by the serial number.</p> <p>If there was a data breach, it would be relatively easy to extrapolate the market share of one's competitors and who they were doing business with.</p> <p>A SNT database system that tracks unitary equipment and qualifying components would be vast. There would be well over 1,000,000 unique serial numbers filed annually in unitary equipment alone.</p> <p>Serial numbers are not always tracked throughout the supply chain for equipment and every qualifying component which may trigger the need to pull a permit.</p> <p>Some products do not contain serial numbers.</p> <p>There are a large number of systems used to manage inventory (including maintaining some serial numbers). Some are a "brand" while others are "homegrown."</p> <p>Distributors use an unknown number of systems which manage inventory. These systems are often highly customized and many do not track serial numbers for all qualifying components.</p>



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	<p>7. System Administrators (IT/developers) will be a 20-character minimum complex password.</p> <p>8. SNT system will be housed in a SAS 70 Audited data center.</p> <p>9. Firewalls protecting all SNT servers would be N.I.S.T. certified.</p> <p>10. The SNT system will be housed on dedicated servers within the state of California.</p> <p>11. The SNT system will be isolated architecturally within its own VLAN. 12. The SNT Data Center will be of the highest caliber including requiring two-factor identification to include card access and biometrics, be manned 24 hours/day with 'man trap' access, which must be approved by data center ops.</p> <p>Include Kevlar infused lobby walls with bullet-proof glass and have true 2N power.</p>	