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Message from the Chair

By Anna Maiuri, Miller Canfield

I wanted to greet you all with a "Happy New Year" but just realized it's already February 2012. It seems that the older I get, the faster the time goes by and the less time I have to keep up with all the exciting developments in our area of law. Thankfully, the folks who put together this journal every quarter help to keep us current. In fact, this particular issue of the MELJ has an informative article by Rebecca Dukes and Chris Dunsky that efficiently summarizes Michigan's most important public acts of 2011 on environmental and natural resource issues. In addition, we have the second part of Dustin Ordway's two-part article on the Stuart rule for determining property lines and access to beach and water for properties on the Great Lakes—this topic will surely make you long for the summer during these cold winter months.

This issue also includes an award winning essay by Benjamin Muth of the renowned Vermont Law School. This essay discusses how California's legal system for determining water rights could be applied to vacant land in Detroit to encourage urban farming while preserving the City's legal ability to return vacant land to urban areas in the future. We have an excellent article by Evan Oxhorn of the Georgetown Law Center about how recent Federal Energy Regulatory Commission orders may make it possible for states to adopt feed-in tariffs that would encourage modern green energy infrastructure growth. Finally, Michelle Reese, a student from Case Western contributes a fun read entitled, "Wild Hogs Going Hog Wild: Michigan's Approach to Managing Feral Swine." A big "thanks" to all these authors for helping us stay current--and entertained.

Another more efficient way to stay current these days is use of webinars. I am pleased to say that our section will be hosting its first webinar sometime in February. Check out the SBM website for upcoming webinar details and events. Also, please join your fellow ELS practitioners for an informal cocktail reception for law students, new members and attorneys interested in learning about membership in the Environmental Law Section. The reception is February 9, 2012, from 5:30-7:30 p.m. at GP Sports, 187 Monroe Street NW, Grand Rapids. Be sure to register with Joan O'Sullivan at jmosullivan9@comcast.net. Looking forward to seeing you there. Till next time….

Anna M. Maiuri, Chair
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Charlie Denton Named Chair of Barnes & Thornburg LLP Environmental Law Department

The national law firm of Barnes & Thornburg LLP has announced that Charlie Denton, the immediate past-Chair of the State Bar of Michigan's Environmental Law Section, has been named as Chair of the firm's national Environmental Law Department, which includes 25 legal professionals in the firm's offices in nine jurisdictions. In addition to serving as a Council member and Chair of the Environmental Law Section, Charlie has served the legal profession by his active leadership of the Michigan Association of Environmental Professionals, the American Bar Association, the Detroit Bar Association, the Air and Waste Management Association, and the Michigan Chemistry Council. The MELJ editors congratulate Charlie for this accomplishment, and thank him again for his outstanding service to the legal profession.

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Upcoming Events

February 2, 2012

The DEQ's new Acting Remediation Division Chief, Anne Couture, will make a presentation (conference call format) to the Section on Thursday, Feb. 2, from 11:30 a.m. to 1:30 p.m. Anne will brief us on the current objectives of the Remediation Division and the new Collaborative Stakeholder Initiative (CSI) reviewing the Division's cleanup programs, and she will answer questions. In addition to her RD role, Anne also remains senior policy advisor to Director Dan Wyant. This presentation is organized by the Section's Hazardous Substances and Brownfields Committee. Email Joan O'Sullivan at jmosoullivan9@comcast.net to register.

February 9, 2012

The Environmental Law Section of the State Bar of Michigan is hosting a new member and law school student mixer at GP Sports, Thursday, Feb. 9, 5:30 – 7:30 p.m., in Grand Rapids. This is a great opportunity for attorneys and students to meet, socialize, and network with environmental practitioners and learn first-hand about environmental law and membership in the Environmental Law Section. Drinks and appetizers are provided. It is informal and fun. See our website for more information. Email Joan O'Sullivan at jmosullivan9@comcast.net to register.

February 2012
Siting Renewable Energy Project—information will be available soon.

May 16, 2012
2012 Air Committee/Michigan Manufacturers Association Conference—information will be available soon.

Summary of 2011 Michigan Environmental Legislation

By Rebecca Dukes and Christopher Dunsky*

Introduction
The environmental and natural resources legislation that the Michigan legislature enacted during 2011 is modest compared with some past years. In contrast with years when the legislature created sweeping new regulatory programs, 2011 was marked by deregulation of certain subject matters, attending to fiscal issues, and requirements that the Department of Environmental Quality (DEQ) and other state agencies improve their permitting processes and revise their enforcement procedures.

1. Permits and Enforcement
The legislature seemed to lash out at the DEQ and other state departments in a series of public acts aimed at revising permit and enforcement procedures. It is apparent that the legislature was critical of the permitting and enforcement processes, particularly the lack of information given to explain permit denials, the time it takes to process permit applications, the backlog of permit applications, enforcement procedures, the heavy reliance on operational memoranda, and the department in general. Legislative analysis documents on the legislature's website suggest the legislature enacted these laws because it believed that state departments are overregulating businesses to the point of impeding economic development and job growth.

Public Acts 236 and 237 were parts of a set of three bills introduced in the House of Representatives. Only two of those bills passed, with the third (House Bill 4044) apparently getting caught up in the Regulatory Reform committee shortly after being introduced. Similarly, Public Acts 246 and 247, 248 were parts of a set of three bills introduced in the Senate. Only two of those bills passed, with the third (Senate Bill 279) passing the Senate but apparently getting caught up in the Regulatory Reform committee at the House. These bills, along with many others addressing permit and enforcement activities, are still pending in the House and the Senate and should be watched this upcoming year.

Permit and Regulatory Programs
Public Act 236 amends Part 13 of NREPA (Permits) to require that when a department denies a permit, it must state with specificity all the reasons for the denial and give the scientific information providing the basis for the denial, to the extent practical. It also requires a department with permitting authority to devote resources from a program to eliminate a permitting backlog and meet the permit processing deadline, if the department failed to meet

the deadline with respect to 10% or more of the applications for a particular category of permit within a fiscal quarter. Section 1 of Part 13 defines "permit," for the purposes of Part 13, as a permit or operating license required by certain sections of the act or rules, and they are listed in section 1. (MCL 324.1301.) "Department" is defined as the department, agency, or officer authorized by the act to approve or deny an application for a particular permit. (Id.) Thus, Part 13 applies to permit application denials by various departments, including the DNR, DEQ, Department of Agriculture and Rural Development, and the DOT. Additionally, it appears that Part 13 imposes the same requirements on local units of government dealing with soil erosion and sedimentation control permits. Due to the overlapping "backlog" directives, passage of Public Act 246 was tied to Public Act 236, so that Public Act 246 would not take effect unless this act also was enacted.

Public 236 took effect December 1, 2011 and amends MCL 324.1307.

Public Act 246 also amends Part 13 of NREPA (Permits) to revise various permit procedures and requirements, including the following:

- A permit application is now considered to be administratively complete when the department makes that determination or 30 days after the state receives the application, whichever occurs first.
- A department, upon request and without additional cost, must now provide a person a list specifying in detail the information required to complete a permit application.
- After the application has been considered administratively complete, a department now may not request new or additional information from an applicant that is not specified in the list. The request is allowed if it includes a detailed explanation of why the information is needed, but the applicant will not be required to provide the information as a condition for the permit to be approved.
- After an application is considered administratively complete, a department may request an applicant to clarify, amplify, or correct information required for an application and require the applicant to provide that information.
- A department must devote resources from a program to eliminate a permit processing backlog and meet the processing deadline, if the department failed to meet the deadline with respect to 10% or more of the applications for a particular category of permits within a fiscal quarter.

The same definitions of "permit" and "department" described for Public 236 also apply to Public Act 246.

Public Act 246 took effect December 8, 2011, and amends MCL 324.1303, 324.1305, and 324.1311.

Inspection and Enforcement Activities

Public Act 235 adds a section to Part 15 of NREPA (Enforcement) to require DEQ to use a fair and equitable sampling process to select persons whose operations or facilities will be

inspected, give information before conducting an inspection, give an opportunity to provide comments after an inspection, and report annually to the legislature regarding the inspections. The requirement to use a fair and equitable sampling process does not apply to any of the following: inspections performed in response to a complaint from a third party; inspections performed because DEQ had evidence that a violation had occurred; follow-up inspections to determine if violations identified in previous inspections had been corrected; inspection required for the issuance of a permit; or inspections otherwise required under State or Federal law. Before conducting the inspection, DEQ must give the person whose operation or facility will be inspected an explanation of the person's rights and responsibilities and the reasons for conducting the inspection. After conducting the inspection, DEQ has to give the person an opportunity to provide comments to DEQ on the quality of the inspection and the professionalism of the inspector.

Public Act 235 took effect December 1, 2011, and adds MCL 324.1505.

Public Act 237 adds a section to Part 15 of NREPA (Enforcement) to require a department, before initiating a civil enforcement action against a person holding a permit, to give the person an opportunity to meet with the department. If the permit holder agrees to a meeting, the department cannot initiate a civil enforcement action until after the meeting is held, unless the meeting is not held within a reasonable time as determined by the department. These provisions do not apply if the enforcement action is a civil infraction action or if the department determines that the violation constitutes an imminent and substantial endangerment to the public health, safety, or welfare of the environment. As with the other newly-enacted acts, the act defines "permit" as a permit or operating license issued under NREPA, and "Department" is defined as the department, agency, or officer authorized by the act to approve or deny an application for a permit. Thus, Public Act 237 applies to permit application denials by various departments, including the DNR, DEQ, and Department of Agriculture and Rural Development.

Public Act 237 took effect December 1, 2011, and adds MCL 323.1511.

2. Review of DEQ Programs

Public Act 248 adds Part 27 to NREPA (Program Review) and requires the Department of Environmental Quality to complete "process improvement" of its major programs, which are defined as permit programs or regulatory programs administered by DEQ under NREPA. The deadlines require DEQ to complete process improvement of one major program by February 1, 2012, and of two major programs each following year, until DEQ completes process improvement for all major programs. DEQ will not have to perform another process improvement for a program that has had one completed before the effective date of Public Act 248 (December 8, 2011).

Process improvement must use process mapping and be conducted by a team that includes at least all the following: two certified facilitators who must administer the process improvement; a representative of people regulated by the program; and a representative of the general public affected by the program. As part of process improvement, DEQ must consider using peer

reviews by other EPA Region 5 states and benchmark analysis, and must post on its website a description of the process improvements made for each major program. Public Act 248 requires DEQ to develop metrics for environmental impacts, process performance, and a review of service practices affecting regulated people and the general public. For permit programs, this must include a calculation of DEQ's per-permit cost to administer the program and a review of the timeliness of the permit process from receipt of a permit application to final approval or denial of the application. These metrics must also be posted on DEQ's website. Additionally, DEQ must survey people regulated by each division and the general public concerning the division's service practices. Surveys must be completed by February 1, 2012 and the aggregate survey results for each division must be posted online without any information identifying survey respondents.

Public Act 248 took effect December 8, 2011, and adds MCL 324.2701-2707.

3. Administrative Procedures

Public Acts 238 , 239 , and 270 amend the Michigan Administrative Procedures Act (MAPA) to revise provisions that govern the promulgation of administrative rules and expressly prohibit operational memoranda and other guidance documents from being enforced as law or regulation. The term "agency" is defined as a state department, bureau, division, section, board, commission, trustee, authority or officer, created by the constitution, statute, or agency action, and includes the Department of Environmental Quality.

The MAPA requires each agency to prepare an annual regulatory plan that reviews the agency's rules. Public Act 238 requires an agency's annual regulatory plan to identify the rules the agency expects to review in the next year, establishes standards for a review of rules pursuant to the annual regulatory plan, and requires each agency to provide a link on its website to the Office of Regulatory Reinvention website. Specifically, the act requires the agency to give first priority to the rules that directly affect the greatest number of businesses, groups, and individuals and the rules that have the greatest actual statewide compliance costs for businesses, groups, and individuals. The review of the rules must now state the following: whether there is a continued need for the rule; a summary of any complaints or comments received from the public; the complexity of complying with the rule; whether the rule conflicts with or duplicates similar rules or regulations adopted by the Federal government or local units of government; and the date of the last evaluation and the degree to which technology, economic conditions, or other factors have changed regulatory activity covered by the rule.

Public Act 238 took effect December 1, 2011, and amends MCL 24.253.

In conjunction with filing a request for rule-making with the Office of Regulatory Reinvention (ORR), Public Act 239 now requires an agency to also include the decision record of an advisory committee, if applicable. The act also specifies that the ORR is not required to approve a request for rule-making and can do so only after it indicates that there are appropriate and necessary bases for approving the request and requires the ORR to issue a response to a

request for rule-making that specifically addresses whether the request has appropriate and necessary basis for approval.

Public Act 239 took effect December 1, 2011, and amends MCL 24.203 and 24.239.

Public Act 270 amends section 32 of the MAPA to specifically provide that guidelines, operational memoranda, bulletins, interpretive statements, or forms with instructions are advisory only, are not binding on anyone other than the agency, and cannot be given the force and effect of law. It also specifies that, except as otherwise provided by law, a court cannot rely on these documents to uphold an agency decision. The act also prohibits a rule from exceeding the rule-making delegation in it authorizing statute.

Public Act 270 took effect December 19, 2011, and amends MCL 24.232.

Notably, this package of bills was introduced with HB 4326, which was passed by both the House and Senate, but vetoed by Governor Snyder. This bill would have prohibited an agency from promulgating or adopting a rule more stringent than the applicable Federal standard unless specifically authorized by Michigan statute, except for an emergency rule. The Governor stated that while he strongly supported the bill's goal of reducing burdensome state regulations, this bill "would preempt state agencies from crafting any regulatory program that exceeds federal standards in order to meet the specific needs of Michigan's citizens, businesses, and natural resources." (House Journal 94, pg 2727.) He expressed his concern that the bill "would inhibit the state's ability to work with businesses and citizens to ensure that our regulatory structure fits Michigan's unique profile." (Id.) The bill has since been re-referred to the House Committee on Regulatory Reform.

4. Water Quality

Michigan Agriculture Environmental Assurance Program

The first two public acts of 2011, Public Act 1 and Public Act 2, address water quality issues associated with agriculture, and partially replace traditional "command and control" programs with a voluntary compliance program.

Public Act 2 amends Part 87 of NREPA (Groundwater and Freshwater Protection) to reduce groundwater contamination caused by pesticides and fertilizer. Public Act 2 codifies a previously existing voluntary program known as the Michigan Agriculture Environmental Assurance Program (MAEAP) that is intended to promote environmentally sound agricultural practices through education, technological assistance, and verification of farmers' performance. Under Public Act 2, any Michigan farmer may have his farm "verified" as meeting MAEAP standards if he satisfies certain educational requirements and implements certain conservation plans approved by MDARD. Many farmers are likely to seek verification so they can qualify for the important legal protections that Public Act 1 provides, which are discussed below. MDARD may revoke a farm's verification if the farm fails to conform to standards or repeatedly violates environmental laws.

Public Act 2 directs MDARD and DEQ to develop a program that will encourage farmers to voluntarily monitor surface water quality and monitor whether MAEAP standards and conservation practices are effective.

Public Act 2 took effect March 9, 2011; amends MCL 324.8702-8710, 324.8713, 324.8714, and 324.8716; adds MCL 324.8713a; and repeals MCL 324.8715.

Public Act 1 provides the following legal protections to farms that are "verified" by MDARD under MAEAP.

- With certain exceptions, the owner or operator of a verified farm is not subject to civil fines under section 3115 of NREPA for a discharge to waters of the state from a farm that is MAEAP-verified and complies with MAEAP standards, if the person promptly corrects the condition and reports the discharge to DEQ within 24 hours after discovering it.
- An MAEAP-verified farm that complies with all applicable MAEAP standards will be treated as meeting all requirements for total maximum daily load (TMDL) purposes under the Federal Clean Water Act, 33 USC 1313.
- If an "act-of-God weather event" causes a discharge from an MAEAP-verified farm that is in compliance with MAEAP standards, then the discharge is considered non-point source pollution rather than pollution from a "point source." The regulation of point source pollution is generally more stringent.

Public Act 1 took effect March 9, 2011; amends MCL 324.8801, 324.8802, 324.8805, 324. 8806, and 324.8807; and adds MCL 324.3109d.

Certification of Treatment Plant Operators

Part 31 of NREPA (Point Source Pollution Control) requires that all wastewater treatment plants be operated by a person who has been certified by DEQ for that purpose. DEQ conducts examinations for persons who seek certification and approves the content of training courses conducted by private entities. Public Act 148 amends Part 31 to allow DEQ to charge fees ranging from $30 to $95 for operator examinations and renewals of certifications, and from $50 to $75 for DEQ review and approval of training courses. Public Act 148 also exempts concentrated animal feeding operations, known as CAFOs, from the requirement to have a certified operator.

Public Act 148 took effect September 21, 2011; amends MCL 324.3110 and 324.4104; and adds MCL 324.3134.

Public Act 147 amends the Michigan Safe Drinking Water Act MCL 325 .1001a *et seq*., to allow DEQ to conduct a training and certification program for operators of facilities that treat or distribute drinking water, and to charge fees for attending these programs.

Public Act 147 took effect September 21, 2011, and amends MCL 325.1009.

5. Fees for Environmental Program

Five different public acts concern fees assessed under various parts of NREPA. For many programs, fees that were scheduled to expire were renewed at the same levels as before. But fees under certain programs were increased or diverted to new purposes.

Public Act 90 extends the sunset date and makes no change in fee amounts for: aquatic nuisance control; NPDES storm water and non-storm water permits; groundwater discharge permits; consolidated permits; watercraft registration and title look-up; and off-road vehicle and snowmobile look-up. Public Act 90 took effect July 15, 2011, and amends MCL324.3104, 324.3118, 324.3120, 324.3122, 324.3306, 324.11135, 324.11153, 324.12103, 324.12109, 324.12112, 324.30109, 324.32312, 324.32513, 324.80130, 324.80315, 324.81114, and 324.82156.

Public Act 149 amends Part 115 of NREPA (Solid Waste Management) to extend until September 30, 2013 the sunset date for the solid waste surcharge fee paid by landfill operators. It also increases the fee from seven cents per cubic yard to twelve cents per cubic yard. These fees are used to pay costs of regulating, inspecting, and monitoring solid waste landfills in Michigan. Public Act 149 took effect September 21, 2011, and amends MCL 324.11525a.

Public Act 150 amends Part 111 of NREPA (Hazardous Waste Management) to allow DEQ to use money in the Waste Reduction Fund to fund the Permit to Install Program run by DEQ's Air Quality Division. Public Act 150 took effect September 21, 2011, and amends MCL 324.11108.

Finally, Public Act 164 amends Part 55 of NREPA (Air Pollution Control) to delay until October 1, 2015 the sunset of fees assessed for the Renewable Operating Permit (ROP) program. Public Act 164 increases annual ROP fees for the approximately 800 facilities in Michigan that are considered to be "major sources" of air pollution. Public Act 164 responds to concerns expressed by the Environmental Protection Agency that authority to collect ROP fees was scheduled to expire on September 30, 2011, and that fees were too low to adequately support the ROP program. Public Act 164 took effect October 4, 2011, and amends MCL 324.5522.

6. Elimination of Reclamation Program for Land Used for Non-Metallic Mining

Until Public Act 214 was enacted last November, DEQ had authority to regulate mining for iron and nonferrous metals, coal mining, mining of sand dunes, and open-pit mining for nonmetallic materials such as gypsum, limestone, sandstone and shale. However, in 1982 the legislature eliminated funding for DEQ activities related to nonmetallic mines, and DEQ apparently informed the legislature that DEQ has not monitored or taken enforcement action nonmetallic mines since 1982. Public Act 214 belatedly recognizes that state of affairs by eliminating the provisions of Part 631 of NREPA (Reclamation of Mining Lands) that had applied to mining for nonmetallic materials, thereby allowing DEQ to eliminate oversight programs for such mines. Public Act 214 also amends related sections of NREPA Parts 13 (Permits) and 91 (Soil Erosion and Sedimentation Control).

State and local regulations other than Part 631 may still apply to nonmetallic mines.

Public Act 214 also repeals MCL 324.63102, enacted in 1995, which required DEQ to conduct a comprehensive study to determine the extent of regulation needed to protect the public interest from adverse effects of mining, because DEQ had completed the study.

Public Act 214 took effect November 8, 2011; amends MCL 324.1301, 324.9115, 324.63101, 324.63103, 324.63103a, 324.63103b, 324.63103c, 324.63103d, and 324.63103e; and repeals MCL 324.63102.

7. Natural Resources

Habitat Restoration Volunteers

Public Act 65 amends Part 5 of NREPA (Department of Natural Resources) to allow DNR to appoint people to serve as volunteers to facilitate DNR's responsibilities under Part 5. P.A. 65 also allows a volunteer, subject to the DNR's direction, to use equipment and machinery necessary for the volunteer service, including equipment and machinery to improve wildlife habitat on State game areas. Interestingly, the version of the bill passed by the House of Representatives contained a provision that afforded volunteers the same immunity from civil liability as a DNR employee, similar to the provision in MCL 324.83105 for forest recreation volunteers, but that immunity provision was excluded by the Senate and did not make it into the final public act.

Public Act 65 took effect June 28, 2011, and amends MCL 324.503**.**

Dissolution Procedures for Private Lake Improvement Boards

Public Act 96 amends Part 309 of NREPA (Inland Lake Improvements) to provide dissolution procedures for private inland lake improvement boards. Part 309 formerly provided procedures for dissolution of only public inland lake improvement boards. The procedure for a public inland lake remains the same: a public hearing to dissolve the lake improvement board must be held upon petition of 2/3 of the property owners owning land abutting the lake. The procedure added for private inland lake improvement boards requires a public hearing to be called upon petition of 2/3 of the property owners owning land abutting the lake or petition of property owners who have been assessed at least 2/3 of the cost of the most recent improvements, excluding the amount assessed to local units at large. This allows property owners whose property is not abutting the lake, but who are being assessed, the same opportunity to petition for the dissolution of a lake board.

Public Act 96 took effect July 15, 2011, and amends MCL 324.30929.

Payments in Lieu of Taxes for Land Purchased by Natural Resources Trust Fund

Public Act 117 and 118 amend Part 21 of NREPA (General Real Estate Powers) with respect to Payments in Lieu of Taxes (PILT) for land purchased by the Natural Resources Trust Fund (Trust Fund). PILT are payments made by the state to local units of government in lieu of property

taxes for the land owned by the state and administered by DNR. Until the passage of Public Act 117 and 118, the portion of payments for assessments by local school districts, intermediate school districts, or community college districts were paid from the School Aid Fund, and the balance of the payments were made as follows: (1) not more than 50% from DNR restricted revenue sources and (2) the remaining balance from the General Fund. These acts require PILT on land purchased by the Trust Fund to be paid in full from the Trust Fund.

Public Act 117 amends Part 21 to require the Legislature to make annual appropriations from the Trust Fund to make the full PILT on state-owned land purchased by the Trust Fund.

Public Act 118 addresses the timing of application of the amendments. For payments made prior to 2012, the procedures remain as they were under the former law. For payments made beginning in 2012, if the property was purchased by the Trust Fund, both the portion of the payment assessed by local school districts, intermediate school districts or community college districts, as well as the remaining balance, are to be paid out of the Trust Fund. If the property was not purchased by the Trust Fund, then payments remain as they were under the former law.

Public Act 117 and 118 took effect July 20, 2011, and amends MCL 324.1903 and 324.2154.

8. Agriculture
In addition to Public Act 1, Public Act 2, described in the water quality section above, Public Acts 79 and 97 affect agricultural matters.

Liens on Farmland Previously Subject to a Development Rights Agreement
Public Act 79 amends Part 361 of NREPA (Farmland and Open Space Preservation) to allow certain landowners whose property is subject to a lien recorded by the state because of relinquishment of a development rights agreement (DRA) to pay off the lien at a reduced rate for a temporary period, and to require interest on the amount of a lien recorded on property whose DRA was terminated because the agreement expired. Under Part 361, the State and a landowner may enter into a farmland DRA, which entitles the owner to a tax credit in exchange for keeping the land in agricultural production for the term of the agreement. Upon expiration or termination of the DRA, the State land use agency must record a lien against the property for the total amount of the allocated tax credit for the last seven years. If the DRA is terminated before its expiration, the amount of the lien will include interest at 6%, but for DRAs that expire, no interest is added. Public Act 79 amends this to provide that, for DRAs that are approved after July 1, 2012 and are terminated by expiration, the amount of the lien will include interest at the rate of one percentage point above the adjusted prime rate. The 6% interest rate still applies for DRAs terminated prior to their expiration.

Additionally, under Public Act 79, from July 1, 2011 through September 30, 2011, a lien recorded before January 1, 2011 could have been paid at 85% of the face value of the lien. From October 1, 2011 through March 31, 2012, a lien recorded before January 1, 2011 can be paid at 90% of its face value.

Public Act 79 took effect July 12, 2011, and amends MCL 324.36111.

Zoning of Farm Biofuel Production Facilities

Public Act 97 amends the Michigan Zoning Enabling Act, MCL 125.3101 *et seq*., to add a provision establishing a biofuel production facility as a "use by right" if the facility is on a farm and meets certain criteria regarding capacity, location, production of feedstock, and use of biofuel and byproducts, which essentially require the farm to grow at least 75% of the necessary feedstock and use at least 75% of the biofuel produced. Public Act 97 does not affect the authority of a local unit of government to prohibit or authorize biofuel production facilities that are not located on farms. It also provides that, if certain of the requirements are not met, the production facility is still a permitted use of property if it receives special land use approval, and outlines the procedures for application and approval of the special land use. The procedures for the special land use are not applicable if the local zoning ordinance provides different criteria for special land use approval of a biofuel production facility located on a farm, and any amendment to a zoning ordinance to provide such criteria is not subject to a protest petition.

The act defines "biofuel" as any renewable fuel product, whether solid, liquid, or gas, that is derived from recently living organisms or their metabolic byproducts and meets applicable quality standards, including ethanol and biodiesel. Biodiesel would not include methane or any other fuel product for an anaerobic digester.

Public Act 97 took effect July 19, 2011, and adds MCL 125.3513.

9. Landfills

Elimination of Requirement for Secondary Liner and Leachate Collection System for RDDPs

Under Public Act 215, landfill research, development and demonstration projects (RDDP) no longer are required to have a secondary liner and leachate collection system. NREPA defines RDDP as a research, development, and demonstration project for a new or existing type II landfill, or for an expansion of such unit. Based on a project abstract, the DEQ director determines whether the RDDP will provide beneficial data on alternative landfill design, construction, or operating methods. If this determination is made, the operator may apply for a construction permit authorizing the establishment of the RDDP. The former Part 115 required a secondary liner and leachate collection system to monitor the effectiveness of the primary liner. Public Act 215 amends Part 115 of NREPA (Solid Waste Management) to eliminate the secondary liner and leachate collection system requirements for RDDPs.

Public Act 215 took effect September 21, 2011, and amends MCL 324.11511 and 324.11511b.

Solid Waste Surcharge Fees Increased

As described above, Public Act 149 increases the Solid Waste Surcharge Fee on solid wastes disposed within Michigan.

*Rebecca Dukes is an attorney at Myers & Myers PLLC and a member of the Environmental Law Section Council. Christopher Dunsky is owner of Christopher J. Dunsky PLLC and a past Chair of the Environmental Law Section.

The Stuart Rule, Part 2: Multi-Jurisdictional Common Law on Private Property Interests along the Shores of the Great Lakes

By Dustin P. Ordway, Ordway Law Firm[1]

The Michigan Supreme Court articulated a common law rule for locating property lines to divide riparian neighbors' rights across the beach and the water along the Great Lakes shore in *Stuart v. Greanyea,* 154 Mich. 132 (1908). The *Stuart* Rule is a particularly useful tool for resolving disputes regarding conflicting claims to lakefront property interests below the meander line on the Great Lakes where the shoreline is curved. See Ordway, "Resolving Great Lakes Shoreline Property Dispute: The Stuart Rule," Vol. 30 Mich Env Law Jnl (Fall 2011). As noted there, the *Stuart* Rule is an elegant method because it solves the problem of equitable division of interests along the Great Lakes shore in a simple way; it preserves access to the water and property rights for every littoral owner regardless of the shape of the shoreline or the upland lots; and the results it mandates will continue to work with the passage of time despite changing Lake levels and shoreline[2] conditions. This article expands on that introduction by providing additional background concerning the *Stuart* Rule and its application.

Background

One clarification that may provide useful background for application of the Stuart Rule is to distinguish it from methods used to resolve similar issues on inland rivers, lakes and streams in Michigan. The Stuart Rule applies along the Great Lakes shorelines, where the State holds certain property rights in trust for the public, beginning at the ordinary high water ("OHW") mark and extending out into the Lake.[3] The private property owner with a lot along Lake Michigan, for example, holds an undivided interest in her property only down to the OHW mark. Thus, the *Stuart* Rule provides a method, beginning at the surveyed corners of the platted or metes and bounds lots of the riparian owners, to ascertain where each owner's authority extends over the beach and into the lake for such purposes as dockage and use of the beach, but subject to the State's authority as trustee.

In contrast, an owner of riparian property along an inland river, lake or stream owns the property to the center or thread of the lake or stream, including all property to the water's

[1] The author wishes to thank Joseph A. Gallmeyer for his assistance with research and drafting of materials for this article.

[2] The words "shore" and "shoreline" are commonly used in two different ways. One is as a generic reference to being located along the Lake, as in "let's go to the shore" or "that is an irregular shoreline." The other, more specific or technical meaning of "shoreline" is the line where the land meets the water.

[3] In NREPA Part 325, the Great Lakes Submerged Lands Act, M.C.L. §324.32501 et seq., the ordinary high water mark is defined by set elevations above sea level for each lake.

edge and beneath the water to the center of the lake or the thread of the stream.[4] Thus, the rules for determining where property boundaries are located between riparian properties along inland lakes, rivers and streams focus on ascertaining where the center of the lake or the thread of the river is located. As shoreline ownership along the Great Lakes is different, there is no such exercise followed under *Stuart* for Great Lakes property owners.

A second background point to be made concerning the method articulated in the *Stuart* Rule is that the purpose in simplest terms is to place property boundaries between adjacent riparian owners perpendicular to the water. Even if the 'center' or 'thread' of a Great Lake could be calculated, there is no need to do so. Instead, working to find an equitable way to divide the beach from the woods or bluff to the water, the *Stuart* Rule focuses on setting a direction perpendicular to the shoreline. To achieve that, *Stuart* sets forth a simple mathematical method using a calculated base line to place property boundaries from the corners of platted lots to the shoreline that closely approximate the location of lines from those same corners perpendicular to the shoreline. The general rule along a straight section of shoreline is to do exactly what most of us do when we approach the top of a bluff or a tree line near the shore – we look straight toward (or perpendicular to) the water.[5]

The *Stuart* Court could have articulated a more complex mathematical formula calling for the calculation of a mathematical arc or curve representing the curved shoreline, followed by the calculation of tangents to that curve at each point along it, and the further calculation of lines perpendicular to the tangents and connecting same to the corners of the respective riparian lots. While such a mathematical model with a more rigorous method like that would be possible, the wisdom of the *Stuart* Court's approach was to create a simpler yet substantially equivalent approach that can be more readily understood and applied in every case. As described in the *Stuart* opinion and the first article in this two-part series, that method involved selecting two end points along the meander line marking the water side of the properties in question, drawing a straight baseline across the water between the two end points, comparing the length of the baseline to the length of the meander line, and using the ratio between those

[4] *Hilt v Weber*, 252 Mich. 198, 202-203 (1930). See also, *Lorman v. Benson*, 8 Mich. 18 (1860) (stating that the common-law rule that the right of ownership extends to the thread of the stream applies to all rivers in this state); *Rice v. Ruddiman*, 10 Mich. 125 (1862) (extending that rule to apply to the shallows of inland lakes); and *Hall v. Wantz*, 336 Mich. 112 (1953) (affirming that the principle established in *Rice* applies to all parts of an inland lake regardless of depth).

[5] See *Shedd v American Maize Products Co.*, 60 Ind. App. 146, 156 (1915) and the cases there cited: "The portion of such submerged lands over which riparian rights may be asserted, is as a general rule determined between adjoining property owners by extending lines from the water's edge at right angles to the prevailing shore line. *Clark v. Campau* (1869), 19 Mich. 325; *Hanford v. St. Paul, etc., R. Co.* (1890), 43 Minn. 104, 42 N.W. 596, 44 N. W. 596, 7 L. R. A. 722; *Northern Pine Land Co. v. Bigelow* (1893), 84 Wis. 157, 54 N.W. 496, 21 L. R. A. 776; *Newhaven Steamboat Co. v. Sargent & Co.* (1882), 50 Conn. 199, 47 Am. Rep. 632; *Delaware, etc., R. Co. v. Hannon* (1875), 37 N.J.L. 276." See also, *Spath v Larsen*, 20 Wn. 2d 500, 512 (1944) ("Along a comparatively straight shore line, [the lateral] boundaries [of tidelands] may easily be determined by erecting lines perpendicular to the shore . . . .")-

two connected lines to calculate the location of the boundaries needed to resolve the case.[6] The result is lines that ensure each property owner has access to the Lake.[7]

A third item of background that is useful for the practitioner considering how to apply the *Stuart* Rule to a given situation is that Michigan's common law on this point is part of a larger body of multi-jurisdictional common law followed in other states along the Great Lakes and the oceans. These jurisdictions include Florida, Massachusetts, New York, Washington, and Wisconsin. See, for example, the summary of case law in several jurisdictions on what is commonly known as the Massachusetts Rule in the State of Washington decision, *Spath v Larsen,* 20 Wn. 2d 500 (1944).

Michigan adopted the Massachusetts Rule and became part of this substantial body of multi-jurisdictional common law in *Blodgett & Davis Lumber Co v Peters,* 87 Mich. 498, 507 (1891), when the Michigan Supreme Court reviewed and followed the rule set forth in *Wonson v Wonson,* 96 Mass 71, 79 (1867) (holding two of three "leading rules" are that "the dividing lines are generally to be drawn in the most direct course from high water mark towards low water mark" and the property is "to be so divided as to give to each parcel a width at its outer or seaward end proportional to that which it has at high water mark," citing numerous earlier authorities). *Stuart* followed *Blodgett* seventeen years later and set forth the clear explanation how to apply the Massachusetts Rule in Michigan.

Application

One of the key steps in applying the *Stuart* Rule is to locate the two end points of the base line for the application of the method. Since the calculation will involve drawing lines from the lot corners to the base line, it is logical to locate the end points along the surveyed meander line marking the water side of the riparian parcels.[8] There may be promontories or other natural features along the shoreline that are sensible choices for locating the end points. However, the surveyed meander line along a curved shore will normally consist of a series of straight lines that turn at permanent monuments. The monuments at two of the turning points along the meander line can serve as convenient and reliable end points.

A second issue in selecting end points may involve locating them so as to provide the fairest basis for calculating the location of the disputed boundary.[9] This issue may be more hypothetical than real. Given the logic of the *Stuart* method, the resulting property boundary following application of the method using different sets of end points surrounding the same disputed boundary will tend to be similar. The degree of uniformity may depend in part on the particular curvature along the shoreline in question. Given the focus on the center of the base

[6] *Stuart, supra*, at 137-138.
[7] *Blodgett and Davis Lumber Co. v Peters*, 87 Mich. 498, 506 (1891).
[8] *Stuart* provides that "[t]he corners of the abutting parcels furnish starting points" for the lines running over the water. *Stuart, supra* at 137. See also, *Blodgett*, *supra*, at 507 ("[I]n ascertaining the shore line or margin of the water, a general line ought to be taken . . . so that the line shall embrace the general available line of the shore. This is exactly what the meanders run by the United States government do.")
[9] The Supreme Court of Wisconsin has chosen base line endpoints by considering the fairness of the apportionment that would result from each of several candidate base lines. *Thomas v Ashland*, 122 Wis. 519, 524 (1904).

line in the *Stuart* Court's description of the method, it may make sense to select end points that place the disputed boundary closer to the center rather than near to one of the end points. Encouraging the parties to agree on end points or allowing them to advocate regarding where the end points should be placed in a particular case may help make the decision easier where to locate them.

The *Stuart* Rule may seem counter-intuitive to the court or party whose initial reaction is simply to extend upland property lines past the meander line to the shoreline where the water meets the land. By that method, the work of the person who created a subdivision plat or calculated the metes and bounds of the parcels in question would create the determinative basis for locating property boundaries beyond the meander line of the metes and bounds lots or the plat. While that may work a fair result some of the time, some such upland lines come toward the Lake at such an angle that they would not create a fair result.[10] In addition, neighboring subdivisions may not follow the same practices with regard to the upland lines, with the result that applying this method as the rule for dividing beach property would create a conflict rather than achieve a workable result. Nor are upland lot lines drawn with the purpose of defining beach ownership. Rather, they are drawn to divide up larger upland parcels into separate ownership and to enable a reliable calculation of acreage.[11]

In contrast to attempting to use conflicting upland lines that were drawn for other purposes and not to address the issue of beach ownership, dockage rights and the like, applying the *Stuart* Rule creates a time-tested and consistent result that property owners can rely on no matter the shape of their lots or the location of their upland side boundaries. By incorporating into the *Stuart* calculation the width of each riparian lot at the meander line, the *Stuart* method builds into the result a means of protecting each riparian property owner from the loss of access to the Lake. While every property owner will have an interest along the base line that is shorter than its frontage at the meander line (because along a concave curved shoreline all lines converge as they approach the center of the curve), the property owners will retain interests proportional to their relative meander line interests.

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[10] See Robillard, *Brown's Boundary Control and Legal Principles* (6th ed), 249, for the claim that when an upland boundary is perpendicular to a straight shore, its extension over water or accretions may be warranted, while in all other situations an upland line is not extended when apportioning accretions or running boundaries over water. See also, *Bliss v Kinsey*, 233 So. 2d 191 (1970) which was favorably cited by the Michigan Court of Appeals in *Boekeloo v Kuschinski* 117 Mich App 619 (1982). In *Bliss*, the Second District Court of Appeal of Florida ruled that when a lot abutting a meander line would be entirely cut off from the water if upland lines were extended straight to the water's edge, those upland lines should instead deflect at the meander line to preserve water access for all owners. The court reasoned that "land purchasers should be able to rely at least generally upon meander lines which indicate certain lots consist of waterfront property" *Bliss*, 233 So2d at 193. See also, *Muraca v Meyerowitz*, 818 NYS2d 450 (2006): "'Regardless of the shoreline configuration, upland boundaries cannot be extended outshore to form the lateral boundaries of the land under water. This simple method for extending existing boundaries would produce little difficulty if all upland boundaries intersected straight shorelines at right angles, or if curved shorelines produced outshore boundary angles which maintained access for all riparian or littoral proprietors."

[11] See, e.g., *Hilt v. Weber*, 252 Mich. 198, 204 (1930) ("It is well known that . . . the meander line was not run at the water's edge in fact. It is also established that it is not a boundary in law. [Meander lines are] a device of the surveyor for the purpose of reporting the contents of the subdivision and to enable the surveyor general to make a plat required by law.")

In a shoreline dispute, one side may argue that general rules of surveying should apply to the calculation of shoreline interests, as well.[12] However, the shoreline property interests of riparian lot owners are unique for several reasons. In addition to those noted above, such as the State's role as trustee of interests in land and water below the OHW mark for the public, there is the fundamental fact that the Lake shore is a natural boundary that is irregular and constantly changing. It is not in the public interest to have a rule of law or equity that either fails to account for that fact or produces an unfair result because of it. The existence of surveyed meander lines at points sufficiently high above the shoreline to survive the effects over time of the power of the weather and of shifts in Lake levels creates a reliable location for the calculation to begin. In addition to providing the location of the side or face of each riparian lot that faces the water, the monuments along the meander line offer convenient and helpful locations for end points for the application of the *Stuart* method.

In sum, a closer look at the application of the *Stuart* Rule helps explain its rationale and how its application can work to protect property interests and to preserve the value of properties along the Great Lakes.

[12] "[A] surveyor cannot be allowed, under any circumstances, to fix private rights or lines by any theory of his own . . . . It is not his business to decide questions of law, or to pass upon facts that belong to the tribunal dealing with the decision of facts." *Jones v Lee*, 77 Mich. 35, 43 (1889).

An Urban Agriculture Permit System for Detroit's Vacant Land

By Benjamin M. Muth*

Introduction

The city of Detroit encompasses 139 square miles. An estimated 40 percent of those 139 squares miles, or 55.6 square miles, roughly the size of San Francisco or Boston is vacant.[1] The vacant land is blighted with abandoned homes, high unemployment and high crime. The Mayor of Detroit, David Bing, has proposed an ambitious plan for the future of Detroit called the Detroit Works Project.[2] Mayor Bing proposes to maintain the 139 square miles of Detroit, but move the bulk of the population to existing neighborhoods closer to the downtown "urban core." Over the next two years he plans to bulldoze a total of 10,000 vacant homes. A condensed population would enable the city to provide quality social services to citizens, as well as promote urban density and ultimately economic growth. Municipal costs would ultimately decline, and the city could begin rebuilding.

Citizens of Detroit have already started urban agriculture plots,[3] capitalizing on the benefits of urban farming: creating jobs in the community, bringing families closer, promoting health and strength, combating hunger, educating citizens, facilitating recycling and reuse, greening the city, lowering Detroit's carbon footprint,[4] and even reducing crime.[5] Efforts to create jobs and health through urban agriculture could have a significant role in Detroit's future.

Instead of selling vacant land for urban agriculture, Detroit needs a permit system for urban agriculture on its vacant land that would foster light economic growth, support healthy communities, and be flexible enough to adapt to a growing city. A carefully tailored permit system is the best way to allow farmers to take full advantage of Detroit's vacant land, while preserving the city's authority to reclaim the land when urban development opportunities arise. If Detroit begins to prosper in the 21st Century, then the city will need a way to reclaim urban agriculture land without using eminent domain power. The Michigan Supreme Court has ruled[6] that economic revitalization is not a public use within the meaning of the Michigan Constitution, [7] and therefore Detroit could not use eminent domain to reclaim farm land for

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[1] Jonathan Oosting, *Detroit has more vacant land than any city in nation except post-Katrina New Orleans*, MLIVE, http://www.mlive.com/news/detroit/index.ssf/2009/09/detroit_has_more_vacant_land_t.html (Sept. 29, 2009, 6:17 AM).

[2] THE DETROIT WORKS PROJECT, http://detroitworksproject.com/ (last visited Jan. 5, 2012).

[3] There are a number of urban agriculture organizations currently operating in Detroit. *See generally* EARTHWORKS URBAN FARM, http://www.cskdetroit.org/EWG/ (last visited Jan. 5, 2012); URBAN FARMING, http://www.urbanfarming.org/garden-locations.html (last visited Jan. 5, 2012); THE GREENING OF DETROIT, http://greeningofdetroit.com/ (last visited Jan. 5, 2012).

[4] Sprouts in the Sidewalk, *Benefits of Urban Agriculture*, http://sidewalksprouts.wordpress.com/ua/benefits/ (last visited Jan. 5, 2012).

[5] Avi Brisman, *Food Justice as Crime Prevention*, 5 J. FOOD L. & POL'Y 1 (2009) (discussing urban farms as crime prevention activities for youth).

[6] County of Wayne v. Hathcock, 471 Mich. 445 (2004).

[7] Mich. Const. art. 10 § 2.

more intense development. Detroit needs a different legal means to reclaim farm land after urban farming on the lands begins to impede economic development. A permit system for vacant land would enable farmers to make beneficial use of the land and preserve the option for Detroit to use that land in the future for economic development.

As a model for such a permit system, I have used the California Water Code. The California Water Code aims to ensure that all the waters of California are used beneficially.[8] If someone is not using the water for a beneficial use, then he or she loses the right to use the water, and the right to use that water is given to someone else.[9] All waters of California are owned by the State: people are given the right to use them but never to own them. This is a good starting point for Detroit's permit system, because Detroit needs to encourage the most beneficial use of its land but retain ownership of those lands. Part I of this article describes the benefits of urban agriculture. Part II describes current and future urban agriculture in Detroit. Part III proposes a permit system for urban agriculture on vacant land in Detroit, and Part IV provides concluding remarks.[10]

Part 1
The Benefits of Urban Agriculture

Urban agriculture reduces hunger, pollution, and unemployment.[11] Urban agriculture produces wholesome food that is healthier than preservative-filled imported foods, and eating healthy is a great preventative healthcare measure. Further, urban agriculture reduces pollution by encouraging food recycling and composting[12] and reduces energy consumption and pollution by lowering dependence on imported foods. Urban agriculture also creates a stronger community and respect for green spaces, which increases the quality of life in a community.[13] Finally, urban agriculture boosts local economies by creating micro-economies based on local food production and sales.

A. Health Benefits

Urban agriculture produces healthy food, which is especially important in Detroit where only 19 percent of food stores offer a minimal "healthy food basket."[14] Limited access to healthy food contributes to the rampant obesity of Detroit residents, who currently rank fifth most obese in

[8] Arthur Littleworth & Eric Garner, *California Water*, in LEGAL CONTROL OF WATER RESOURCES 216-18 (Sax et al. eds., 4th ed. 2006).

[9] *Id.*

[10] This proposal specifically deals with vacant land that has reverted back to the city. This paper does not deal with regulations for private property owners wishing to implement urban agriculture.

[11] See Sprouts, *supra* note 4.

[12] NC STATE UNIV., COMMUNITY BACKYARD COMPOSTING PROGRAMS CAN REDUCE WASTE & SAVE MONEY 2 (1996) *available at* http://www.bae.ncsu.edu/topic/vermicomposting/pubs/composting.pdf.

[13] Byoung-Suk Kweon et al., *Landscape components, land use, and neighborhood satisfaction*, 37 ENV'T AND PLANNING B: PLANNING AND DESIGN 500 (2010).

[14] A "healthy food basket" implies food that is based on the food pyramid. JOHN E. MOGK, PROMOTING URBAN AGRICULTURE AS AN ALTERNATIVE LAND USE FOR VACANT PROPERTIES IN THE CITY OF DETROIT: BENEFITS, PROBLEMS AND PROPOSALS FOR A REGULATORY FRAMEWORK FOR SUCCESSFUL LAND USE INTEGRATION 6 (2010),*available at* http://law.wayne.edu/pdf/urban_agriculture_policy_paper_mogk.pdf.

the United States.[15] Although Detroit's neighborhoods have corner stores, gas stations and convenience stores, the city is devoid of any national food chains operating in the city limits[16] except for a Whole Foods that is slated to open in 2013.[17] This fundamental nutrition gap, or "food desert," places Detroit's residents at a biological and economic disadvantage.

Children's diets influence their mental development and affect their learning abilities.[18] Children need adequate nutrition in Detroit, where high school dropout rates are currently the highest in the United States.[19] Public schools do not provide adequate nutrition, and urban agriculture could be used to support healthy diets for children outside school.[20] Schools could also serve produce from urban agriculture in their cafeterias, possibly saving money. Providing children with locally grown, healthy food, in and out of school, could help Detroit's youth succeed in education and become part of a healthy economy.

Urban agriculture gives citizens a "sense of community, pride and belonging."[21] Urban agriculture creates community awareness and social bonds through a shared sense of responsibility for green spaces. Those green spaces create education, tourism, and community development through school and work programs.[22] Green spaces also create attractive communities and demand for housing.[23]

B. Environmental Benefits

The average food item in the United States travels an estimated 1,500 miles before it reaches its final plate.[24] Urban agriculture decreases a population's dependence on imported foods that require packaging, refrigeration and storage.[25] By reducing the amount of energy consumed by transporting food, urban agriculture reduces the environmental impact of Detroit's eating habits.

Urban agriculture also provides secondary sources of environmental benefits. Rooftop gardens, for instance, collect rainwater that would otherwise drain into city sewers, potentially over

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[15] *Id.*

[16] *Id.*

[17] Nathan Skid, *Whole Foods moving into Midtown*, CRAIN'S DETROIT BUSINESS, July 27, 2011, *available at* http://www.crainsdetroit.com/article/20110727/FREE/110729893/whole-foods-moving-into-midtown.

[18] Mackay Hannah, DIET, BEHAVIOUR AND THE JUNK FOOD GENERATION: HOW DIET AFFECTS CHILDREN'S BEHAVIOUR, LEARNING AND MOOD (2007) *available at* http://www.fabresearch.org/uploads/1050/13358%20Mackay%20Diet_Mackay%20Diet.pdf.

[19] Greg Toppo, *Big-city schools struggle with graduation rates*, USA TODAY, June 6, 2006, *available at* http://www.usatoday.com/news/education/2006-06-20-dropout-rates_x.htm#grad (stating that Detroit's high school graduation rate was 21.7 percent in 2006).

[20] Mary Story et al., *Schools and Obesity Prevention: Creating School Environments and Policies to Promote Healthy Eating and Physical Activity*, 87 MILBANK QUARTERLY 71 (2009).

[21] Littleworth & Garner, *supra* note 8, at 7.

[22] *Id.*

[23] *Id.*

[24] SUSTAINABLE TABLE, *Why buy local?*, http://www.sustainabletable.org/issues/whybuylocal/#fn2 (last visited Jan. 5, 2012).

[25] Littleworth & Garner, *supra* note 8, at 7.

whelming the sewage system.[26] Reducing the strain on Detroit's sewage system could reduce operation costs and save resources for the city.[27] Further, rooftop gardens are natural temperature regulators, keeping buildings warmer in the winter and cooler in the summer,[28] which would reduce Detroit's utility bills and carbon footprint. Last, urban agriculture encourages community composting operations that turn food-waste into useful resources for urban agriculture.[29]

C. Economic Benefits

The United States Department of Agriculture estimates that locally produced food will become a $7 billion market by 2012.[30] Detroit is in a unique position to foster urban agriculture because of its 55 square miles of vacant land.[31] Urban agriculture could potentially generate $200 million in sales and create 5,000 jobs.[32] Further, when urban agriculture increases the quality of life in Detroit, property values will rise, giving new homeowners an incentive to live in Detroit and increase the tax base.[33]

D. Current Urban Agriculture in Detroit

Detroit has approximately 113–263 community garden plots maintained by groups of citizens, and approximately 900 urban gardens that are smaller individual plots maintained by individuals or small groups.[34] These smaller gardens and plots are used primarily for personal and community consumption. The gardens are spread throughout the city in no pattern, appearing wherever there is sufficient space and energy for a community to maintain them. Most important, and the focus of this proposal, is that some urban agriculture occurs on vacant land that has reverted back to the city.

Some individuals and groups have proposed farming larger areas of land. For instance, Gary Wozniak, project director for the Recovery Park program, hopes to farm 20 acres of vacant Detroit land.[35] Detroit has yet to approve the project. Similarly, Detroit businessman John Hantz has proposed establishing the Hantz Farms project, which would involve farming 2,000 acres of vacant city-owned land.[36] Detroit has yet to approve this plan as well, although the city did

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[26] *Id.*

[27] Nancy Kaffer, *Water plant works to run freely again: Detroit aims to present feds a plan by Aug.*, CRAIN'S DETROIT BUSINESS, May 22, 2011, *available at* http://www.crainsdetroit.com/article/20110522/FREE/305229973/water-plant-works-to-run-freely-again-detroit-aims-to-present-feds-a-plan-by-aug.

[28] Littleworth & Garner, *supra* note 8, at 7.

[29] NC STATE UNIV., COMMUNITY BACKYARD COMPOSTING PROGRAMS CAN REDUCE WASTE & SAVE MONEY 2 (1996) *available at* http://www.bae.ncsu.edu/topic/vermicomposting/pubs/composting.pdf.

[30] Littleworth & Garner, *supra* note 8, at 7.

[31] *Id. at* 6.

[32] *Id.*

[33] Byoung-Suk, *supra* note13.

[34] *Id.* at 32–33.

[35] John Gallagher, *Detroit's proposed urban farms face hurdles, Detroit officials hesitant to OK large projects*, The DETROIT FREE PRESS Nov. 13, 2010, http://www.freep.com/apps/pbcs.dll/article?AID=/20101113/BUSINESS04/11130373/Detroit-s-proposed-urban-farms-face-hurdles&template=fullarticle.

[36] *Id.*

agree to sell Hantz 3.5 acres of land on which Hantz will plant 1,000 oak trees.[37] Further, even though Detroit sold Hantz the land to plant oak trees, it has not agreed to allow Hantz to sell any agricultural products from the land.[38] These larger farms have longer-term implications for the city of Detroit. Unlike small plots, a larger farm requires substantial economic investment and has a long-term profit timeline. Owners of larger farms will try to maintain their operations in the city for long periods of time, creating a potential conflict with the goals of a rebuilding city.

Part 2
Challenges Facing Urban Agriculture in Detroit
A. Michigan's Right to Farm Act

This proposal is premised on an important assumption: Detroit must be exempt from Michigan's Right to Farm Act ("RTF Act")[39] so that it can create specific urban agriculture regulations, practices and rules.[40] Currently, the RTF Act preempts any urban agriculture regulation that Detroit may promulgate. The RTF Act is intended to protect existing farmers from urban sprawl by creating a *per se* defense to nuisance claims against farmers: if a farm operates consistent with the RTF Act's "Generally Accepted Agricultural and Management Practices," (GAAMPs) then the farm is *per se* not a nuisance.[41]

The RTF Act applies to all farms. The act defines "farm" as "the land, plants, animals, buildings, structures, including ponds, used for agricultural or aquacultural activities, machinery, equipment, and other appurtenances used in the **commercial production** of farm products,"[42] that are engaged in "the operation and management of a farm or a condition or activity that occurs at any time as necessary on a farm in connection with the **commercial production**, harvesting, and storage of farm products."[43] (emphasis added). Therefore, any urban agriculture operation that sells goods cannot be declared a nuisance by local rules.[44] Detroit needs the flexibility to create specific urban agriculture regulations, and therefore must be exempt from the RTF Act. A Michigan House Bill proposed this exemption in 2010 but was not passed by the House or Senate.[45] However, on December 14, 2011, the Michigan Commission

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[37] DETROIT FREE PRESS, *Commercial Farming to start in Detroit with 1,000 trees*, (Aug. 8, 2011), *available at* http://www.daltontomich.com/images/uploads/Commercial_farming_to_start_in_Detroit_with_1,000_trees___Detroit_Free_Press.pdf.

[38] *Id*.

[39] MCL §§ 286.471–286.474 (West 2010).

[40] Mogk, *supra* note 14, at 26-27 (stating that "The Act has no rational application to agriculture within Detroit. The city should be free to regulate all permitted agriculture uses through the adoption of local zoning and environmental standards that protect exi[s]ting neighborhoods").

[41] *Id.* at 26.

[42] MCL § 286.472(a) (West 2010).

[43] MCL § 286.472(b) (West 2010).

[44] Mogk, *supra note* 14, at 29 (citing *Charter Township of Shelby v. Papesh*, 267 Mich. App. 92 (2005).

[45] Michigan House Bill 6458 proposed to amend the RTF Act so that it would not apply to any city with a population over 900,000. This was apparently intended to exclude Detroit, although Detroit's population has declined below 900,000. H.R. 6458, (Mich. 2010) *available at* http://www.legislature.mi.gov/(S(qwtvugz4dfsflqegefzp4bes))/mileg.aspx?page=GetObject&objectname=2010-HB-6458.

of Agriculture and Rural Development approved regulatory amendments that exempt Michigan cities with a population of over 100,000 from State regulations that prohibit local regulation of farm operations.[46]

B. Michigan's Eminent Domain Law

Urban agriculture could bring short term economic revival in Detroit and help to revitalize blighted areas. However, new growth opportunities may present themselves in 50 to 75 years.[47] If Detroit allows citizens to buy vacant land for urban agriculture, then the city would have to use eminent domain to retake the land when a development project is proposed for the area. However, the city would not be able to use its eminent domain power because of a 2006 amendment to the Michigan Constitution.

After the United States Supreme Court's controversial decision in *Kelo v. City of New London* [48], Michigan citizens voted to change the constitutional guidelines for eminent domain effective December 23, 2006.[49] Article 10 § 2 of the Michigan Constitution was amended to state that ""Public use" does not include the taking of private property for transfer to a private entity for the purpose of economic development or enhancement of tax revenues."[50] If Detroit allows individuals to buy vacant land for urban agriculture, then the city would have no way to revert the land back to urban uses when new economic opportunities arise. Therefore, Detroit must create a permit system for urban agriculture and retain ownership of the land for the future.

Part 3
Permit System for Urban Agriculture in Detroit

Detroit needs to establish an urban agriculture permit system with regulations and nuisance standards that foster and control urban agriculture. This note proposes an urban agriculture permit system modeled on California's water permit system: the California Water Code ("CWC").[51] The CWC is a great example of a permit system that regulates a finite resource in order to maximize its beneficial use. The CWC encompasses prior appropriation[52] and riparian rights[53], and regulates them through a sophisticated permit system.[54] Detroit's urban agriculture permit system should incorporate all three of those principles, which is why the

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[46] Dawson Bell, *State moves to help Detroit, other cities with urban farming*, DETROIT FREE PRESS, http://www.freep.com/article/20111215/NEWS06/112150507/State-move-to-help-Detroit-other-cities-with-urban-farming (Dec. 15, 2011).

[47] Ashley Hennen, *Urban Agriculture Summit "grows Michigan's future,"* THE HUB, http://blog.thedetroithub.com/2010/10/29/urban-agriculture-summit-grows-michigans-future/ (Oct. 10, 2009) (stating that some people see the global economy as "more cyclical than linear").

[48] Kelo v. City of New London, 545 U.S. 469 (2005).

[49] BALLOTPEDIA, *Michigan Eminent Domain Restriction Amendment, Proposal 4 (2006)*, http://ballotpedia.org/wiki/index.php/Michigan_Eminent_Domain_Restriction_Amendment,_Proposal_4_(2006) (last visited Jan. 5, 2012).

[50] Mich. Const. art. 10 § 2.

[51] West's Ann. Cal. Water Code §§ 1–85350 (2009).

[52] The first party to file an application for use of water has the first priority to that water.

[53] All uses of water in California are subject to "reasonable use," which traditionally is associated only with riparian water doctrines, but is incorporated into California's permitting system.

[54] All parties interested in using water in California must file an application for a permit.

CWC is a great model. Part A of this section describes the CWC's regulation system, Part B describes administration of the system, and Part C adapts the CWC to create a model for Detroit's urban agriculture permitting system.

A. The California Water Code

The CWC is a useful example of a permit system that regulates the use of a limited resource for the benefit of the public.[55] California's water law originated with miners staking claims to water flows during the California gold rush.[56] California was originally a prior appropriation state, but evolved to incorporate riparian principles, and currently has a permitting system.[57] Four conditions must be met in order to use water in California; 1) there must be a specific applicant or water user; 2) the applicant must file an application with the State Water Resources Control Board ("SWRCB"); 3) the applicant must put the water to "beneficial use," and 4) unappropriated water must be available to supply the proposed use.[58] In addition to the above requirements, all water uses must comply with California's Public Trust Doctrine, which states that water is held in trust for the people by the state so that they may enjoy its use.[59]

The CWC defines "beneficial use," and any application that proposes a non-beneficial use is denied. This gives the SWRCB the authority to determine whether a use is beneficial or not. Further, California's Public Trust Doctrine overrides any SWRCB permit, and a court may nullify a permit that violates the Public Trust Doctrine.[60] The integration of permitting and the Public Trust Doctrine makes the CWC a great model for an urban agriculture permit system.

B. Administration

1. System Administration

The SWRCB maintains and administers California's water permit system.[61] The SWRCB's proposed budget for the 2010-11 fiscal year is $825,592.00.[62] Operating a comprehensive resource board is expensive, and Detroit likely cannot afford a brand new city department.

If Detroit determines that a new division of city government would be too expensive or politically impossible, then it could delegate the responsibilities to an a existing city department. Currently, the Department of Buildings and Safety Engineering receives all

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[55] *Supra* note 51.

[56] Roderick E. Walston, *California Water Law: Historical Origins to the Present*, in SELECTED WORKS OF ROBERT E. WALSTON 1 (2008), *available at* http://works.bepress.com/cgi/viewcontent.cgi?article=1000&context=roderick_walston.

[57] *Id.* (Stating that California's prior appropriation system, or "first in time, first in right," was integrated with a riparian system, and eventually became the modern permitting system).

[58] Littleworth & Garner, *supra* note 8, at 216-17.

[59] WALTSON, *supra* note 56, at 8. *See* National Audubon Society v. Superior Ct. Alpine Cnty., 658 P.2d 709 (Cal. 1983) (stating that State Board water permits are subject to California's Public Trust Doctrine).

[60] *Id.*

[61] CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY, *The History of the California Environmental Protection Agency*, http://www.calepa.ca.gov/about/history01/swrcb.htm (last updated Jan 7. 2009).

[62] Governor's Budget 2010-11, *3940 State Water Resources Control Board*, http://www.ebudget.ca.gov/StateAgencyBudgets/3890/3940/department.html (last visited Dec. 4, 2010).

applications for building modifications, including agricultural land use permits.[63] The department could administer a permit system for urban agriculture.

2. Initial Property Survey

The doctrine of prior appropriation grew out of the fundamental idea that water is a finite resource.[64] Detroit's estimated 55 square miles of vacant land[65] constitute a finite resource, albeit in low demand. Detroit should survey its vacant land to determine which plots are suitable for urban agriculture. By limiting the amount of land available for urban agriculture, the city would create demand for its use and a market for the sale or lease of urban agriculture permits.[66] Further, by taking a comprehensive survey and designating which vacant land is available for urban agriculture, Detroit can plan urban agriculture into its overall plan for growth.

In determining whether a vacant plot is suitable for urban agriculture, the city should conduct a multi-factor analysis. The city should consider: 1) the location of the plot (neighborhood, school nearby, main road access etc); 2) the size of the plot; 3) whether there is farming on the plot currently;[67] 4) whether there is a growing operation proposed for the plot; 5) the proximity of the plot to a food market or other point of sale; 6) whether adequate water may be pumped or delivered to the plot; 7) how the plot fits into the city's comprehensive growth plan (an urban garden in a proposed industrial area would not benefit industry or agriculture); 8) how the proposed urban garden would fit into the current neighborhood; 9) economic concerns;[68] and 10) most important, the estimated or measured level of lead contamination in the soil.[69] After a comprehensive list of property suitable for urban agriculture is created, the city can implement a permit system.

C. Detroit's Urban Agriculture Permit System[70]

1. Background Principles

After the city determines which vacant land is suitable for urban agriculture ("Farmable Land,"

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[63] MOGK, *supra note* 14, at 26.

[64] WILLIAM GOLDFARB, WATER LAW 15 (1984).

[65] OOSTING, *supra* note 1.

[66] GOLDFARB, *supra* note 64, at 17 (stating that one tenet of prior appropriation is that a permit is transferrable to another party via sale).

[67] MOGK, *supra note* 14, at 32-33 (stating that there are currently around 900 urban gardens in Detroit).

[68] There are a number of tax issues for the city in determining where urban agriculture should be located. Those concerns are outside the scope of this paper. For a discussion of tax incentives and lease options, *see* MOGK, *supra* note 14, at 22-26.

[69] Detroit's soil, like soil in all urban areas, has lead contamination in varying amounts, caused by lead paint chips and dust from the remains of demolished buildings, emissions from lead-based gasoline, and airborne lead from industry. *Id.* at 10. For a detailed discussion of soil testing in urban environments for contaminants, including lead, *see* Allison H. Turner, ENVTL FIN. CENTR., *Urban Agriculture and Soil Contamination: An Introduction to Urban Gardening*, (2009) *available at* http://cepm.louisville.edu/Pubs_WPapers/practiceguides/PG25.pdf.

[70] For this section, all principles are adapted from the California Water Code. Footnotes to the California Water Code simply identify the pertinent code sections that inspired the proposal. Footnotes do not mean that the California Water Code supports the assertions of this proposal.

hereinafter "FL"), the permit system can begin.[71] The first principle of the permit system is that all FL is property of the city of Detroit and remains city property.[72] The second principle is that all FL is available for farming ("Reasonable Farming Operations," hereinafter "RFO") as long as no other person has already begun RFO.[73] Hereinafter, unused FL will be referred to as Available Farmable Land ("AFL"). Therefore, a person may apply for a permit to begin RFO on AFL.

The city should create a definition of RFO to which all applicants must adhere.[74] Anyone who applies for a permit and fails to show that he or she will operate within the city's definition of RFO will not be granted a permit. Further, if a party is granted a permit, and then ceases RFO or violates the requirements of RFO, that party's permit will be revoked. This requirement ensures that AFL is used for RFO at all times. The city can guarantee that urban agriculture exists in the city by conditioning permits on actual RFO. Otherwise, the AFL reverts back to the city and becomes available to new applicants.

The city should define RFO to create the most beneficial use of the AFL for the city, the public, and the environment.[75] RFO should define: 1) which operations constitute "Farming Operations;" 2) which crops are considered to be "Farm Crops;" 3) what may be done with crops after harvesting (private consumption, sold at market, sold to distributor, sold to restaurant, used to create secondary food products etc.); 4) which animals and livestock are considered to be "Farm Animals;" 5) which structures are considered "Farm Structures:" and 6) other substantive definitions. Defining what "Farming Operations" are, and then denying applications that do not show that the applicant will practice those operations on AFL, will control the use of city land. Further, a working definition of "Farming Operations" is more flexible than zoning and nuisance ordinances and much more flexible than the definition of farming under the RTF Act.[76]

The city should also define "reasonable" operations, which apply to the "Farming Operations" defined above.[77] "Reasonable" standards could specify: 1) what farming methods are appropriate or necessary for certain crops (irrigation, drip irrigation, greenhouse farming etc.;) 2) what seasons are appropriate for certain crops; 3) what fertilization techniques are appropriate or necessary; 4) what equipment is appropriate to use on the plot (it may not be reasonable to use a John Deere combine to harvest a small urban corn plot); 5) what times of the day are acceptable for loud farm equipment; and 6) any other standards the city deems

[71] West's Ann. Cal. Water Code §§ 1200, 1202 (2009) (defining which waters of California are available for appropriation under the State Board permitting system).

[72] West's Ann. Cal. Water Code § 102 (2009) (stating that all waters within the State are property of the people of the State).

[73] West's Ann. Cal. Water Code § 1201 (2009) (stating that all waters that are unappropriated or are not riparian are available for new appropriation).

[74] West's Ann. Cal. Water Code § 1240 (2009) (stating that the purpose for appropriation must be some beneficial purpose, and when that purpose ends the right ceases).

[75] Detroit must be exempt from the RTF Act; *see supra* Part II A.

[76] MOGK, *supra note* 14, at 30 (describing the painstakingly difficult procedures for changing GAAMPs under the RTF Act).

[77] *Supra* note 74.

appropriate. A "reasonable" requirement could ensure that each small plot will have individually tailored requirements. For instance, it may be reasonable to have 100 chickens on AFL 5 miles from downtown Detroit but only 5 chickens on the rooftop of an elementary school. Finally, if the city determines that an individual is not practicing RFO, then it has the power to revoke the permit, and the AFL would become available to new applicants.[78]

2. The Permit Process

After a person has decided to use AFL for RFO, he or she must file an application with the appropriate city department.[79] That application should include 1) the name and address of the applicant, 2) the location and address of the AFL, 3) the nature and size of the RFO on the AFL, 4) the location and description of any proposed construction on the AFL, 5) the intended use of the harvest of the RFO, 6) the time when any construction will begin, 7) the time required to complete the construction, 8) all data from pertinent city or state departments concerning the extent, if any, to which the urban environment would be affected by the RFO, including a statement by the applicant of measures proposed to be taken to eliminate or minimize those effects, and 9) how much water, if any, the RFO will require and where the applicant intends to get that water supply.[80] The city may also require the applicant to produce any maps, diagrams, or other data that the city determines is necessary to make a sound decision on the application.[81]

After an applicant files an application, he or she establishes priority to use the AFL over later applicants.[82] A significant good faith effort to complete the application and secure the AFL must be made in order for it to hold a priority and be considered for review.[83] If an application does not reflect a good faith effort, then that application will not hold a priority. If an application reflects a good faith effort, but is missing minor information, then the applicant receives an extension to perfect the application and the applicant holds a priority of use to the AFL.[84] If the applicant then fails to perfect the application after the extension, then the applicant loses his or her priority.[85] At any time the city may seek supplemental information from the applicant.[86]

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[78] West's Ann. Cal. Water Code §§ 1227.4, 1240, 1241 (2009) (stating that the board may revoke any water right that is being used for a purpose which the development was not intended, that if water is not put towards a beneficial purpose the right to use ends, and stating that when that happens the water returns back to the public).

[79] West's Ann. Cal. Water Code § 1225 (2009) (stating that the right to use water cannot be acquired except upon compliance with the water code provisions).

[80] West's Ann. Cal. Water Code § 1260 (2009) (outlining the elements of a California water permit).

[81] West's Ann. Cal. Water Code § 1261 (2009) (stating that maps, drawings, and other data may be necessary).

[82] West's Ann. Cal. Water Code § 1270 (2009) (stating that a bona fide application holds a priority).

[83] *Id.*

[84] *Id.*

[85] West's Ann. Cal. Water Code § 1271 (2009) (stating that an unperfected application is means for rejection).

[86] West's Ann. Cal. Water Code § 1275 (2009) (stating the board has the right to request supplemental information).

After an application is filed, the city will post notice of the filed application to inform all interested city organizations and the public.[87] The notice gives any party opposed to the issuance of a RFO permit an opportunity to protest the application.[88] An objection must be filed within 10 days of notice and must contain: 1) the name and address of the protestant, 2) good faith reasons for the protestant's objection of the approval, 3) the protestant's signature.[89] After the initial application is perfected and all objections are filed and heard, the board may grant or deny the permit.[90]

If the permit is granted, then the applicant must sign an agreement stating that the permit is for a specific time period only, that the granting of one permit does not give the applicant a right to further permits, and that the city may choose to deny an application for a subsequent permit for any lawful reason, including converting the land back to urban use. Each permit must have a specified duration that is long enough for a farmer to get one or more crop cycles from the land, but short enough that the city has the ability to change the use of the land if and when a new development becomes feasible. Permits lasting 3-5 years may be a suitable compromise. The city should use the same length of time for all permits. However, a current permit holder has priority when re-applying for a RFO permit on the same AFL.

3. Fees

Initial application fees must be cheap enough to entice potential urban agriculturalists to apply. Exorbitant application fees could force urban agriculture "underground" and rob the city of an opportunity to foster a growing industry. Currently, the fee to obtain a special land use and zoning permit in Detroit is probably prohibitive for most urban farming projects.[91] To initiate the urban agriculture permit system, the permit fee in the first round of permitting should be close to zero. In the future, if the permit system is healthy and urban agriculture is economically successful, the city could increase fees to support the expenses of the governing body. However, in the immediate future, the fees should be low to motivate people to begin RFO on AFL.

Part 4
Conclusion

Detroit holds a unique opportunity to foster urban agriculture due to its vast amounts of vacant land. Urban agriculture has the potential to boost the economy and the health of Detroit citizens and create desirable neighborhoods that people want to live in. However, a delicate balance must be achieved so that the city embraces urban agriculture and, at the same time, plans for future of economic development. The easiest course of action is to do nothing and

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[87] West's Ann. Cal. Water Code § 1300 (2009) (describing California's notice requirements).

[88] West's Ann. Cal. Water Code § 1330 (2009) (stating that a party may file a written protest against the approval of the application).

[89] West's Ann. Cal. Water Code § 1331 (2009) (describing California's protestant requirements).

[90] West's Ann. Cal. Water Code § 1350 (2009) (stating that the board may choose to grant or deny any permit).

[91] The fee for an initial hearing for a special land use or zoning permit is $1,000. CITY OF DETROIT, BUILDINGS AND SAFETY ENGINEERING DEPARTMENT FEE SCHEDULE (July 1, 2009) *available at* http://71.159.23.2/BSEOnline/division.action?pageId=11003.

simply allow people to purchase vacant city-owned land, which may then be used for urban agriculture. If that scenario occurs, then the Michigan Constitution would preclude the city from using eminent domain authority to retake the land. An urban agriculture permit system would be a step in the right direction for Detroit because it would promote urban agriculture on vacant land and allow the city to keep ownership of land that is vacant today but may be valuable for development in the future.

Wild Hogs Going Hog Wild: Michigan's Approach to Managing Feral Swine

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INTRODUCTION

Michigan is facing a serious environmental problem: feral swine. The feral swine problem is the result of hogs escaping from commercial hunting preserves, otherwise known as sport-swine ranches, sport-hunting preserves or "canned-hunt ranches."[1] At these ranches, hunters pay a fee to hunt sporting swine in a controlled environment. This variation of traditional hunting has been marketed as giving hunters the opportunity to experience a hunt similar to one in the wild, but with a higher probability of walking away with a prize catch. Unfortunately, these ranches have led to a serious issue for Michigan, as the swine are often able to break through or dig under the fences at the ranches. Once freed, the swine become feral and wreak havoc on the environment, surrounding farms and communities. This essay discusses the feral swine problem in Michigan, the decision to declare sport swine as an invasive species, and the problems Michigan still faces in attempting to eradicate feral swine.

Why Feral Swine are a Problem

Feral swine injure the environment, personal property, crops and habitats for other animals.[2] Feral swine attack and kill farm animals and pets.[3] In addition to physical damage, feral swine bring diseases to the people and animals around them. These diseases can be serious, including pseudorabies, anthrax, salmonella and influenza.[4] These injuries and threats to the environment, humans, animals and habitats create a serious concern for the State of Michigan, which the Michigan Department of Natural Resources ("DNR") chose to address by declaring the swine to be an invasive species.

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[1] Michigan Wildlife Conservancy, *In Pursuit of Boss Hog*, THE WILDLIFE VOLUNTEER (Mar-Apr. 2007) http://www.miwildlife.org/n-boss%20hog.asp.
[2] Michigan Department of Natural Resources, *Summary of Wild Swine Eradication Info*, http://michigan.gov/dnr/0,1607,7-153-10370_12145_55230---,00.html (accessed June 21, 2011).
[3] *Id.*
[4] Thomas Hutton, et al., Disease *Risks Associated with Increasing Feral Swine Numbers and Distribution in the United States*, paper for the Wildlife and Fish Health Committee, July 11, 2006 (available at http://michigan.gov/dnr/0,1607,7-153-10370_12145_55230---,00.html).

Where It All Begins: Sport-Swine Ranches

Michigan's feral swine problem began with the importation of swine that are not native to Michigan. Sport-swine ranch owners purchased swine outside Michigan, and brought them into the state and onto their ranches to be hunted for profit.[5] These sporting swine are mostly Eurasian wild boar and other exotic species of swine.[6] While the intent of these ranches is to keep the swine captive in fenced enclosures, swine have found ways to escape. Once swine escape, they quickly become feral as they undergo physical and behavioral changes necessary for survival in the wild.[7] The feral swine population increases as the swine reproduce in the wild.

Although sport-swine ranches market their facilities as being similar to traditional hunting, there are obvious differences between hunting wild animals and hunting captive animals. Sport-swine ranches allow the swine to roam free in what resembles a natural, wooded area, which suggests a traditional hunt, but with a limited population of swine in a controlled area, it is hard to see how this type of hunt could be considered traditional. In many instances the ranch owner is able to direct the hunter to specific areas where the swine are known to gather, increasing the chance of a kill and decreasing any resemblance to a traditional hunt.

Hunters generally come to these ranches for a trophy kill, hoping to display the swine's head as a trophy.[8] In a way, canned-hunting sounds like a win-win situation—the ranch makes a profit, and the hunters obtain their trophy kill. It is easy to see why hunters may enjoy engaging in this activity knowing that they have a good chance of taking home that coveted trophy. Unfortunately, this win-win situation ignores the risk of the swine escaping the ranches and injuring the environment and transmitting disease to people and animals.

Environmental concerns aside, the owners of sport-swine ranches have an economic incentive to keep their ranches functioning. More than fifty ranches in Michigan allow the hunting of swine; a hunter will pay hundreds of dollars to participate.[9] These ranches can be found throughout the state: in southern Michigan,[10] the upper peninsula[11] and the northern lower peninsula.[12] With the current economic conditions, the owners of those ranches may face reduced income if they can no longer allow swine hunting. Many of the ranches offer other animals to hunt, including deer and elk, so being forced to eliminate swine will not put those

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[5] Julie Morrison, *Growing threat from feral swine has officials contemplating bounty to encourage hunting of the animals*, FLINT JOURNAL (Jan. 23, 2009) (available at http://www.mlive.com/news/flint/index.ssf/2009/01/growing_threat_from_feral_swin.html).

[6] *Id.*

[7] United States Department of Agriculture, *Feral/Wild Pigs: Potential Problems for Farmers and Hunters*, Agriculture Information Bulletin No. 799, (Oct. 2005) (accessed at http://www.aphis.usda.gov/publications/wildlife_damage/content/printable_version/feral%20pigs.pdf).

[8] Thunder Hills Ranch, http://www.thunderhillsranch.com/.

[9] Ann Arbor News, *Feral Pigs in Michigan: State Senator pushes for outright ban*, http://annarbor.com/news/state-senator-moves-to-make-feral-pig-ban-a-state-law/ (accessed June 21, 2011).

[10] *See* Thunder Hills, *supra* note 8.

[11] *See* Wild Spirit Guide Service, http://www.wildspiritguide.com/Pages/Block.asp?page=Contact.

[12] *See* Michigan Trophy Hunts, http://michigantrophyhunts.com/4_Location.html.

ranches entirely out of business, but ranches that offer only swine hunting will find it more difficult to stay in business.[13] While reduced income for ranch owners is another valid concern, it does not outweigh the negative impacts these feral swine are having on the residents and the environment of Michigan. Failure to address the feral swine problem will continue to have a negative economic impact on local farmers, whose crops are damaged and whose animals are falling ill to diseases by the feral swine. It will also have a negative impact on the residents of Michigan, who will be faced with the spreading of disease and environmental damage due to the presence of feral swine.

Escaping Ranches and Becoming Feral

The importation of swine onto hunting ranches merely begins the problem; once the swine escape and become feral the real problem occurs. Swine become feral within a few months of escaping captivity.[14] This process of "becoming feral" involves physical and behavioral changes. The physical changes include growing tusks and becoming larger and more hairy.[15] The large size of feral swine has led to what has been called the "half-ton-hog phenomenon."[16] Behaviorally the swine become more aggressive, to the point where several humans are killed each year due to swine attacks.[17] The swine population increases from there, as the swine reproduce rapidly, breeding year-round, with females producing multiple litters per year, averaging six piglets per litter.[18]

It is estimated that there are around 2000 feral swine in Michigan today.[19] Feral swine carry and transmit many diseases to humans, including rabies, anthrax, salmonellosis, toxoplasmosis and trichinosis.[20] Although transmission of these diseases to humans is rare, it can be fatal.[21] Disease transmission from feral swine to humans will certainly become more common as the feral swine population continues to grow.

More commonly, feral swine transmit diseases to animals. Pseudorabies, leptospirosis, swine brucellosis, bovine tuberculosis, and vesicular stomatitis caused by feral swine all concern the United States livestock industry. But losses to domestic livestock and consequent harm to

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[13] Rosemary Parker, *Deadline passes, Michigan's feral swine invasive species order goes into effect*, Kalamazoo Gazette (Oct. 10, 2011) (available at http://www.mlive.com/news/index.ssf/2011/10/deadline_passes_michigans_fera.html).

[14] Jack Mayer, *History and Ecology of Wild ~~Feral~~ Hogs in the Southeast*, Savannah River National Laboratory (last visited Nov. 12, 2011) (available at http://www.dnr.sc.gov/wildlife/hog/pdf/wildpigs-JackMayer.pdf).

[15] *Id.*

[16] *Id.*

[17] *Id.*

[18] *Id.*

[19] Bob Bloomer, *Another View: Michigan must enforce ban on feral swine, imported wild hogs, to protect agricultural jobs, economy*, Saginaw News Letters (Jul. 22, 2011) (available at http://www.mlive.com/opinion/saginaw/index.ssf/2011/07/another_view_michigan_must_enf.html). See DNR map of feral swine sitings and kills, attached, and available at http://www.michigan.gov/documents/dnr/2011FSMap_010512_372841_7.pdf.

[20] Hutton, *supra* at note 4.

[21] *Id.*

American farms are not the only concern.[22] The emergence of these diseases within American livestock will likely cause issues with meat exports with serious economic effects.[23]

Feral swine damage land and wildlife. Feral swine root in the ground damaging wildlife habitats.[24] They damage agricultural crops.[25] Feral swine damage to wildlife is illustrated by the case of *Feldman v. Bomar*, which arose from feral swine population causing near extinction of the Santa Cruz Island fox population in California.[26] The feral piglets attracted non-native golden eagles to the island.[27] In turn, the eagles hunted the Santa Cruz Island foxes nearly to extinction.[28]

MICHIGAN'S APPROACH TO FERAL SWINE

Michigan had several options for managing its feral swine issue, including self-regulation of swine ranches, declaring feral swine to be an invasive species and eradication. Ranch owners understandably desire internal regulation rather than declaring their swine to be invasive species.

Internal Regulation of Sport-Swine Ranches

On March 24, 2011, ranch owners supported the proposed Sporting Swine Marketing Act, which would have allowed sport-swine ranches to self-regulate, through the Department of Agriculture and Rural Development (MDA), in order to avoid an invasive species declaration and to allow the ranches to continue importing swine.29 The legislation would place restrictions on the ranches, such as registration as a sport-swine ranch, permanent identification markings on all swine before they reach 50 pounds, strict fencing requirements, negative pseudorabies testing for each swine at least 30 days before entrance to the ranch, and blood-testing of all hunted swine to check for any diseases "the department considers necessary".30 While this proposal seemed to address some of the concerns that accompany feral swine, the proposal was opposed by environmental groups and groups like the Michigan Pork Producers Association, who believe that lenient regulation through the MDA would lead to furthering, not solving, the problem of feral swine.31

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[22] *Id.*
[23] Chris Killian, *Hunting ranches at odds with hog farms over feral swine*, Kalamazoo Gazette, http://www.mlive.com/news/kalamazoo/index.ssf/2010/12/hunting_ranches_at_odds_with_h.html (accessed June 19, 2011).
[24] Mayer, *supra* note 14.
[25] USDA: Animal and Plant Health Inspection Service, *Feral/Wild Pigs: Potential Problems for Farmers and Hunters*, Agriculture Information Bulletin No. 799, (available at http://www.aphis.usda.gov/publications/wildlife_damage/content/printable_version/feral%20pigs.pdf) (last visited December 12, 2011).
[26] Feldman v. Bomar, 518 F.3d 637, 640 (9th Cir. , 2008).
[27] *Id.*
[28] *Id.*
[29] HB 4503 (2011).
[30] *Id.*
[31] *MABA Urges Label Wild Pigs Invasive Species*, 35 MICHIGAN PORK PRODUCERS ASSOCIATION 8 (2011).

At one time, there were more than fifty sport-swine ranches in Michigan that imported and bred sporting swine.[32] The ranch owners and patrons desired internal regulation of the ranches, so that the swine could still be imported with additional measures to keep them captive. Opponents argued that the question of the swine escaping the ranches was not a matter of if, but when, and that internal regulation would not prevent the swine from escaping.[33]

Hunting in Michigan is regulated by the DNR.[34] DNR derives this regulatory authority through the Natural Resources and Environmental Protection Act (NREPA), which authorizes DNR to regulate the hunting of game listed within the Act. [35] The proposed Sport Swine Marketing Act would have transferred any DNR regulatory authority over feral swine to the MDA allowing internal regulation of the ranches.[36]

The sport-swine industry hoped that internal regulation would be approved as an alternative to labeling the swine as invasive species. But internal regulation ignores the difficulty of preventing swine from escaping, even with stringent fencing requirements.[37]

The internal regulation has a more basic flaw. We can assume that sport-swine ranch owners already do everything they can to prevent their swine from escaping, as every escaped swine would be a lost profit for the ranch owner. The Sporting Swine Marketing Act would not create more of an incentive for the sport-swine ranchers to ensure that the swine do not escape, since their economic self-interest in retaining their stock should already have been enough of an incentive.

Declaring Swine to be an Invasive Species

Internal regulation of sport swine ranches was not to be; on August 8, 2011, the DNR director issued an order declaring "[w]ild boar, wild hog, wild swine, feral pig, feral hog, feral swine, Old world swine, razorback, Eurasian wild boar, Russian wild boar" to be invasive species.[38] This order makes it illegal for anyone, including sport-swine ranch owners, to import sporting swine into Michigan.[39]

While DNR does not have the power to regulate hunting on private lands, it does have the responsibility of "preventing the introduction of and controlling or eradicating invasive species."[40] DNR used this authority to declare sporting swine to be invasive species, therefore making it illegal for anyone to import them into the state, including sport-swine ranch owners.

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[32] Ann Arbor News, *Feral Pigs in Michigan: State Senator pushes for outright ban*, http://annarbor.com/news/state-senator-moves-to-make-feral-pig-ban-a-state-law/ (accessed June 21, 2011).
[33] Pamela Black, *Michigan's Canned Hunt Ranches Fight to Keep Exotic Swine Legal*, http://news.change.org/stories/michigans-canned-hunt-ranches-fight-to-keep-exotic-swine-legal (accessed June 20, 2011).
[34] Mich. Comp. Laws § 324.501
[35] *Id.*
[36] HB 4503 (2011).
[37] *See* Bloomer, *supra* note 19.
[38] DNR Invasive Species Order Amendment No. 1 of 2011.
[39] *Id.*
[40] Mich Comp Laws §324.41323

[41] As a result, sport-swine ranches must change their operations to offer only hunting of animals like deer and elk, or close their ranches.

According to the National Invasive Species Council (NISC), invasive species are "non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human, animal or plant health."[42] NISC focuses on non-native species that cause these harms without providing an equivalent or greater benefit to society.[43] Cost-benefit analyses have been conducted to determine whether the cost of controlling feral swine outweighs the costs of all the problems caused by the swine.[44] These studies have shown that while the costs caused by feral swine are higher than the costs of controlling the populations, further assessments need to be done to measure the overall success of feral swine population control programs.[45]

The invasive species order may affect entities that are not affiliated with sport-swine ranches, but have an interest in breeding and raising swine for other purposes. The Michigan Animal Farmers Association has members who breed and raise captive swine as livestock. MAFA requested a declaratory ruling for clarification of the "scope and factual application" of the invasive species order.[46] MAFA members who breed and raise captive swine as livestock wanted to know what kind of testing DNR would use to determine if an animal is a "hybrid, genetic variant or offspring of the prohibited swine listed in the ISO."[47] DNR responded that this identification would include characteristics of the swine including: bristle-tip coloration, dark "point" coloration, coat coloration, underfur, juvenile coat pattern, skeletal appearance, tail structure, ear structure and other characteristics that may be identified by the scientific community.[48]

Declaring the swine to be an invasive species alone will not eliminate feral swine, but will reduce the numbers of new swine being added to the feral swine population in Michigan, and it will make state control of a smaller population of feral swine more effective.

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[41] *Feral Swine Debate Takes Another Twist in Michigan*, Detroit Local News, http://www.clickondetroit.com/news/28235444/detail.html (accessed June 18, 2011).
[42] Invasive Species Advisory Committee, *Invasive Species Definition Clarification and Guidance White Paper*, http://www.invasivespecies.gov/global/ISAC/ISAC_documents/ISAC%20Definititions%20White%20Paper%20%20-%20FINAL%20VERSION.pdf (accessed June 18, 2011).
[43] *Id.*
[44] See Richard M. Engeman, et al, *Damage reduction estimates and benefit-cost ratios for feral swine control from the last remnant of a basin marsh system in Florida*, 31 ENVIRONMENTAL CONSERVATION 207, Sept. 2004; *see also* Michael J. Bodenchuk, *Feral Hog Management: Tying Performance Measures to Resources Protected*, National Conference of Feral hogs, http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1001&context=feralhog&sei-redir=1&referer=http%3A%2F%2Fwww.bing.com%2Fsearch%3Fq%3Dcost%2Bbenefit%2Banalysis%2Bferal%2Bswine%26form%3DDLCDF8%26pc%3DMDDC%26src%3DIE-SearchBox#search=%22cost%20benefit%20analysis%20feral%20swine%22.
[45] *Id.*
[46] Michigan Department of Natural Resources, *In the Matter of Michigan Animal Farmers Association Request for Declaratory Ruling* (Dec. 13, 2011) (available at http://www.michigan.gov/documents/dnr/MDNR_DECLARATORY_RULING_2011-12-13_FINAL_371200_7.pdf).
[47] *Id.*
[48] *Id.*

Eradication of Existing Feral Swine Populations

Solving the feral swine problems requires eradication of escaped swine, and not just the elimination of swine living on ranches. Residents are permitted to shoot any feral swine they come across,[49] but this means has not proved sufficient to eliminate feral swine, as the feral swine population increases as they continue to reproduce. Eradication is the next big step in eliminating feral swine entirely from Michigan.

The MDA and the DNR worked together in 2007 to create a plan for feral swine eradication.[50] They also joined the Natural Resources Conservation Service (NRCS) in a swine trapping program in several counties in Michigan.[51] This trapping program allows the removal of feral swine without killing them, which appeases animal rights groups. This Michigan-based trapping program is in addition to trapping done by the United States Department of Agriculture-Wildlife Services. [52]

In 2010, legislation was enacted that allows anyone to shoot and kill feral swine on public or private lands.[53] This statute declares feral swine to be a public nuisance, and allows the public to take a more active role in removing them. Although an open season will remove some swine, it is less effective than a state-run eradication program, which would allow government officials to find and kill the swine. State-run eradication programs have been utilized in other states, and have proven to be a quick and effective way to remove feral swine.[54]

NATIONWIDE RESPONSES TO FERAL SWINE

Feral swine have been a problem in many areas of the United States, with some regions being affected more than others. Current feral swine mapping shows that California, Texas and Florida have the highest distribution of feral swine, with the Southeast United States being the most affected overall.[55] With this mapping, Michigan stands out as the northern state with the highest distribution.[56] Some states choose to declare feral swine as invasive species, while other states focus solely on eradication efforts.

Declaring to be Invasive Species

Minnesota has declared Eurasian swine and European wild boar as invasive species. [57] This regulation makes it illegal to "import, possess, propagate, or transport Eurasian wild boars and their hybrids, except by permit from the Commissioners of Agriculture and Natural

[49] Summary of Wild Swine Eradication Planning, *supra* at note 2.
[50] *Id.*
[51] *Id.*
[52] *Id.*
[53] Mich. Comp. Laws § 324.41323.
[54] *Feldman v. Bomar*, 518 F.3d at 640.
[55] National Feral Swine Mapping System (last updated Dec. 2, 2011) (available at http://128.192.20.53/nfsms/).
[56] *Id.*
[57] Minn. R. 6216.0250

Resources."[58] The Commissioner of Agriculture and Natural Resources may capture any swine running at large and control them at any time.[59]

New York is also currently facing issues with feral swine, and has established an invasive species council to address whether swine, in addition to other nonnative species, should be regulated as invasive species. [60] Although New York has not promulgated any regulations declaring swine to be invasive species, the New York Invasive Species Clearinghouse has listed feral swine as a "priority species" and has called for eradication to be accomplished by residents hunting the swine, with a permit, or reporting the swine to initiate state action. [61] Texas has taken similar action, allowing the hunting of feral swine, but declining to regulate them as an invasive species.[62]

Other Approaches

Oregon attempted to address its feral swine issue by requiring landowners to "control or contain the beasts."[63] Oregon discovered that this requirement has not solved the feral swine problem, which supports the argument that internal regulation of sport-swine ranches is not a sufficient way to control feral swine populations.[64] The Oregon legislature later enacted banning the importation of feral swine, while continuing to regulate the importation of breeder swine and slaughter swine.[65]

New Hampshire has a confirmed feral swine population, and has taken a similar approach requiring owners to keep any wild boar in a "safe and suitable enclosure" to prevent them from "running at large."[66] The largest population of feral swine in New Hampshire can be found in the southwest region where they are considered to be the private property of the Blue Mountain Forest Association and therefore cannot be hunted without permission.[67] The New Hampshire Fish and Game Department has said that all feral swine are considered escaped private property, and may not be hunted without permission from the property owner.[68] Although New Hampshire does not allow residents to freely shoot or trap any feral swine, it does participate in the National Wildlife Service's National Wildlife Disease Program, which is a

[58] Minn. R. 6216.0265

[59] Minnesota Departments of Natural Resources, Agriculture, and Board of Animal Health, *Feral Swine Report to the Minnesota Legislature* (Jan. 15, 2010) (available at http://files.dnr.state.mn.us/aboutdnr/reports/legislative/feral_swine_2010.pdf).

[60] New York Invasive Species Council, *Final Report: A Regulatory System for Non-Native Species* (June 10, 2010) (available at http://www.dec.ny.gov/docs/lands_forests_pdf/invasive062910.pdf).

[61] *See* New York Invasive Species Clearinghouse and Website (last visited December 1, 2011) http://www.nyis.info/index.php?action=about.

[62] Mark E. Mapston, *Feral Hogs in Texas*, The Texas A&M University System (last visited Dec. 1, 2011) http://www.icwdm.org/Publications/pdf/Feral%20Pig/Txferalhogs.pdf.

[63] Or. Admin. R. 635-058-0010

[64] *See* Bruce Coblentz, et al, *Pest Risk Assessment for Feral Pigs in Oregon* (last visited Dec. 1, 2011) (available at http://www.oregon.gov/OISC/docs/pdf/swine_ra.pdf?ga=t).

[65] Or. Admin. R. 603-011-0310

[66] N.H. Rev. Stat. Ann. § 467:3

[67] New Hampshire Fish and Game, *Frequently Asked Questions* (last visited Dec. 1, 2011) http://www.wildlife.state.nh.us/Hunting/faqs_hunting.htm#Boar.

[68] *Id.*

national program that monitors diseases spread by wildlife and the efforts being made to maintain the spread of disease.[69]

Texas has the biggest problem with feral swine, with an estimated population of over 1.5 million.[70] Texas Parks and Wildlife has designated these swine to be "unprotected, exotic, non-game animals" which can be taken by any means or methods at any time of year."[71] The issue made news in September 2011 when Texas governor Rick Perry signed legislation allowing hunters to shoot feral swine from helicopters.[72] Texas Parks and Wildlife provides online reference materials to help citizens with eradication efforts, including methods to build better traps, but admits the methods suggested may keep the population in check, and total eradication is not likely.[73]

Public figures have weighed in on the feral swine issue. Musician Ted Nugent owns ranches in several states, including a 340-acre ranch in Michigan called Sunrize Acres.[74] At Sunrize Acres hunters can book cabins year-round and hunt "whitetail deer, wild boar, American buffalo and various exotics."[75] Nugent fought heavily against Michigan's decision to declare the swine invasive, claiming that the state has inflated its estimates of the feral swine population, and that this action would be punishing responsible ranch owners for the actions of irresponsible ranch owners.[76] National swine expert Dr. Jack Mayer's response to Nugent was that every commercial hunting ranch contributes to the feral swine population because the swine cannot be contained by fences.[77]

CONCLUSION

Feral swine are and will continue to be a problem in Michigan until they are eradicated. Nationwide efforts to deal with feral swine have shown that the problem is not easily solved. The DNR's order declaring sporting swine to be invasive species will likely reduce the feral swine population in Michigan from increasing any faster than it has to due to breeding. The sport-swine ranch owners' proposed alternative solution of self-regulation would not likely succeed because they had shown that the financial incentive of keeping the swine from escaping had failed. Michigan's concern from this point on will be achieving total eradication of the feral swine population and enforcing the invasive species order.

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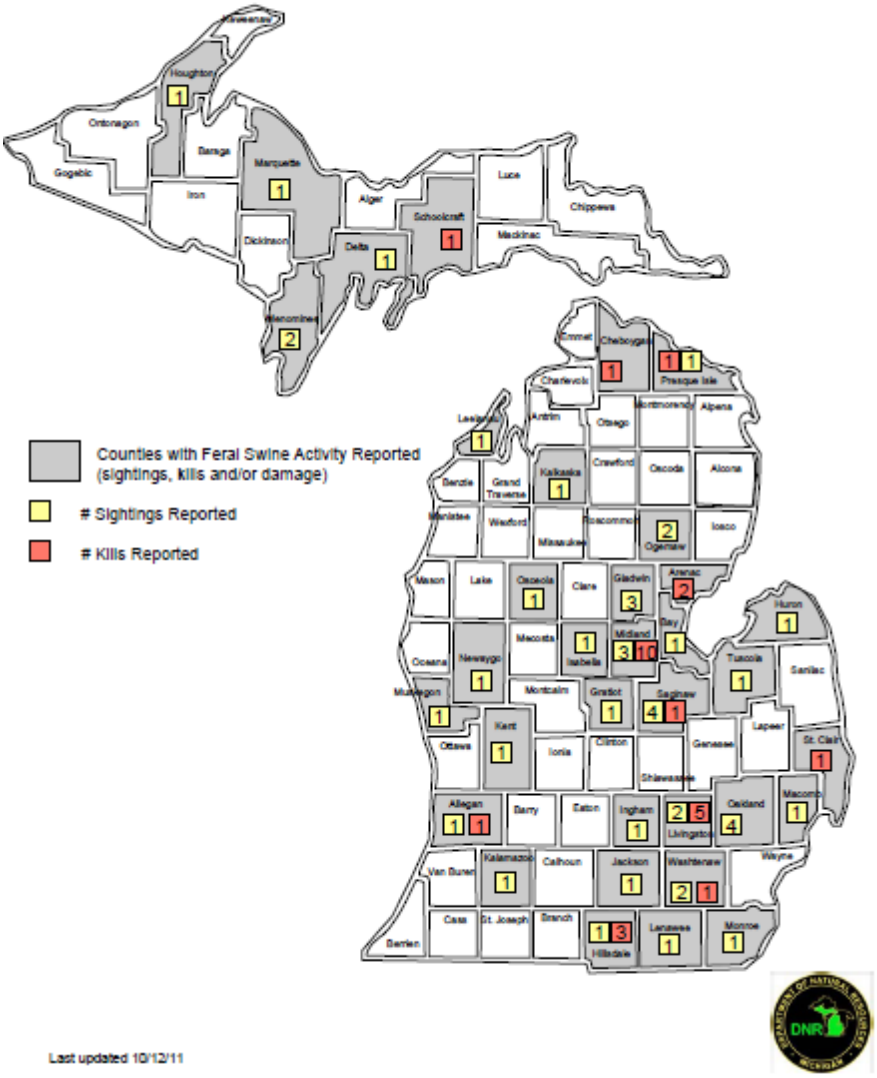
[69] New Hampshire Fish and Game, *Feral Swine in New Hampshire* (last visited Dec. 1, 2011) http://www.wildnh.com/Wildlife/hogs_feral.htm.
[70] Texas Park & Wildlife, *Feral Hogs* (last visited Dec. 1, 2011) http://www.tpwd.state.tx.us/huntwild/wild/nuisance/feral_hogs/#dist.
[71] *Id.*
[72] Mark Essig, *High Above the Hog*, THE NEW YORK TIMES (Aug. 30, 2011) http://theweek.com/article/index/218812/rick-perry-and-texas-feral-pig-problem.
[73] *See* Texas Parks & Wildlife, *supra* note 68.
[74] Sunrize Safaris (last visited Dec. 4, 2011) http://www.tednugent.com/sunrize/.
[75] *Id.*
[76] Rosemary Parker, *Ted Nugent rants on feral swine, urging lawmakers not to allow invasive-species order to stand*, KALAMAZOO GAZETTE (June 1, 2011) http://www.mlive.com/business/west-michigan/index.ssf/2011/06/nugent_rants_on_feral_swine_ur.html.
[77] *Id.*

Feral Swine Reported & Killed in Michigan
2011



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America's QuasiFeed-inTariffs: Leveraging Recent FERC Orders to Kickstart a Renewable Energy Revolution

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Introduction

Germany has pioneered a new tool for renewable energy growth that has resulted in a 76% increase in solar photovoltaic installations in 2010 at the average cost of $3 per month, per person[1] Unfortunately, federal legislation has prevented the United States from using this tool. Two recent orders (Orders) by the Federal Energy Regulatory Commission (FERC or Commission) change that[2]

With these Orders, FERC gave state public utility commissions (PUCs) additional leeway to set wholesale electricity rates for certain facilities. The Commission interpreted the Federal Power Act (FPA) and the Public Utility Regulatory Policies Act (PURPA)[3] to allow states to adopt quasi feed-in tariffs (FITs), a tool similar to Germany's proven method of incentivizing new renewable energy projects. This article discusses how states and green companies can benefit from the Orders. Part 1 of this article discusses renewable technologies and markets. Part 2 discusses federal energy politics and legislation. Part 3 explains the Orders and their consequences. Part 4 examines the Orders' subsequent history. Finally, Part 5 explores the challenges and opportunities presented by these Orders.

Part 1

Because Structural Changes to the Electric Power Industry are Challenging, Distributed Renewable Generation Offers the Best Path Forward

Improving energy infrastructure is vital for America's economic and environmental health. Increasing renewable energy and building new transmission resources are two essential improvements.[4] But developers face tremendous roadblocks in siting projects and transmission. Distributed generation (DG)[5] simultaneously addresses both problems by placing renewable projects where they are wanted without requiring new transmission lines. Despite DG bypassing these structural challenges, investors require proper financial incentives to

[1] Federal Ministry of Economics and Technology, *Photovoltaic Market Development* http://www.renewables-made-in-germany.com/en/start/solarenergie/photovoltaik/marktentwicklung.html (last accessed Dec. 22, 2011).
[2] *Cal. PUC*, 123 FERC ¶ 61,047 (2010); *Cal. PUC.*, 133 FERC ¶ 61,059 (2010). FERC rejected a request for rehearing in *Cal. PUC*, 134 FERC ¶ 61,044 (2011).
[3] Pub. L. No. 56-617 (Lexis 2011), 16 U.S.C. 791a *et seq* (Lexis 2011) (codifying the FPA); Pub. L. No. 95-617 (Lexis 2011), 16 U.S.C. § 824a-3(a) (Lexis 2011) (codifying PURPA).
[4] *See e.g.*, American Wind Energy Ass'n. and the Solar Energies Industry Ass'n., *Green Power Superhighways: Building a Path to America's Clean Energy Future* (2009).
[5] Distributed generation involves multiple small generation facilities located close to consumers. Distributed generation need not be renewable; an on-site diesel generator is also DG. In contrast, most electricity is currently generated in a few large, distant facilities and transmitted long distances to consumers. Other sources of DG, such as backup diesel generators, are pursued for reliability concerns beyond the scope of this paper. DG as used in this paper refers to renewable DG unless specified otherwise.

pursue such projects. FITs are successfully providing this incentive across the world, but have been illegal in America due to outdated, gridlocked federal energy legislation.[6]

a) Renewable Energy Offers Myriad Benefits

The benefits of shifting America's energy portfolio toward renewable sources are legion. Increased use of renewable electricity: 1) minimizes price fluctuations by diversifying fuel sources; 2) enhances reliability of electric service; 3) meets new demand for electricity; 4) spurs job creation through construction, maintenance, and research; and 5) helps the environment.[7] Properly incentivized renewable DG substantially increases renewable generation, securing these benefits. Many states are promoting renewable energy growth within their borders.

i) DG Bypasses the Structural Constraints of Traditional Generation

Substantially increasing renewable energy requires a diverse generation portfolio. Solar and wind farms will contribute, but large-scale projects are hindered by significant up-front costs,[8] a sluggish regulatory process,[9] and barriers to constructing new transmission lines.[10] Large projects are frequently delayed by legal challenges related to developing wilderness areas or areas of cultural significance.[11]

DG solves all these problems while offering additional benefits. DG bypasses the siting, transmission, regulatory, and environmental problems affecting large-scale projects. With DG, site-specific permits are rarely required where the property is already developed.[12] DG turns the "not in my backyard" mentality that constrains most energy development on its head. Instead, property owners affirm: "Yes, in my backyard. And on my roof." DG also offers unique benefits: increasing the resilience of the grid to damage at centralized plants or transmission lines; mitigating environmental justice concerns by facilitating citizen participation in electricity markets; distributing revenues among citizens from the sale of electricity; and reducing the costs of building new transmission lines.[13] Moreover, diversifying the types of renewable plants speeds the deployment of renewable energy.

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[6] This article refers to two types of FITs: "true FITs" and "quasi-FITs." A true FIT is primarily designed to incentivize energy investment through rates that investors find attractive. Such incentivization is not the primary purpose of quasi-FITs. Quasi-FITs, as used in herein, refer to preset rates constrained by broader energy policy.

[7] *See e.g.*, American Wind Energy Ass'n., *Why is a National RES Needed?*, http://archive.awea.org/legislative/pdf/Why_RES_is_Needed.pdf (last accessed Dec. 22, 2011) (Describing the benefits of a national renewable standard).

[8] Renewable Energy Policy Network for the 21st Century, *Challenges*, http://www.local.ren21.net/why-local-renewables/challenges/ (last accessed Dec. 22, 2011).

[9] Often an uncoordinated federal and state review of a project's merits, environmental impact, and effect on consumers. *See Quechan Tribe v. U.S. Department of the Interior*, 2010 WL 5113197 (S.D. Cal. 2010).

[10] James A. Holtkamp & Mark A. Davidson, *Transmission Siting in the Western United States*, Holland & Hart, pp. 6-9 (Aug. 2009) http://www.hollandhart.com/articles/Transmission_Siting_White_Paper_Final.pdf.

[11] Hadassah M. Reimer and Sandra A. Snodgrass, *Tortoises, Bats, and Birds, oh my: Protected-Species Implications for Renewable Energy Projects*, 46 Idaho L. Rev. 545 (2009-2010) (noting ecological problems); *cf.* Tracey A. LeBeau, *The Green Road Ahead*, 56 Fed. L. 38, 42 (2009) (noting problems in historical areas).

[12] *See Ida Martinac, Considering Environmental Justice in the Decision to Unbundle Renewable Energy Certificates*, 35 Golden Gate U.L. Rev. 518 (2005).

[13] *See id.*

ii) Feed-in Tariffs are the Best way to Incentivize Distributed Generation

Encouraging significant deployment of DG also requires financial incentives. Even where DG is profitable, adoption must be convenient. Americans currently pursue renewable DG because of environmental – not monetary – concerns. This limits the DG market to wealthy environmentalists.

FITs address both issues. FITs are standardized long-term contracts within a given jurisdiction applicable to all electric facilities of a certain size and to all investor-owned electric utilities (IOUs).[14] FITs require IOUs to pay preset rates for a generator's total output.[15] The certainty provided by a specified rate and a guaranteed market facilitates project financing by reducing investor risk.[16] Standardized contracts minimize transaction costs allowing convenient, inexpensive deployment.[17]

FITs create powerful incentives for DG. A draft European Parliament report found well-designed FITs to be the most efficient and effective method of deploying renewable energy.[18] In 2010, Germany's FIT increased solar power deployment by 76%.[19] The average cost has been $3 per month per German.[20] Individuals and businesses that elect to install DG actually earn money.[21] The program has also proved incredibly popular among Germans: 94% want to see renewable energy use expanded, and nearly 80% believe that the added costs have been appropriate.[22]

iii) Criticisms of Feed-in Tariffs are Largely Misguided

Some critics contend that FITs distort electricity markets through preset prices.[23] This criticism is misleading, as it presumes FITs corrupt a laissez-faire market. In truth, electricity markets are characterized by market failures, including: inelastic demand, barriers to entry, transmission

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[14] John Perkins, *Overcoming Jurisdictional Obstacles to Feed-in Tariffs in the United States*, 40 Golden Gate U. L. Rev. 97 (2009-2010).

[15] Steven Ferry, Chad Laurent, et al., *Fire and Ice: World Renewable Energy and Carbon Control Mechanisms Confront Constitutional Barriers*, 20 Duke Envtl. L. & Pol'y F. 125, 170 (2010).

[16] *Cf.* U.S. Department of Energy, *Solution Center: Power Purchase Agreements*, April 26, 2010, http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/ppa.html (describing how power purchase agreements help secure project finance).

[17] *Supra* note 14.

[18] Commission of the European Communities, *The Support of Electricity from Renewable Energy Sources*, p. 3 (2008), http://ec.europa.eu/energy/climate_actions/doc/2008_res_working_document_en.pdf.

[19] *Supra* note 1.

[20] Bundesministerium fur Umwelt, Naturschutz und Raktorsicherheit, *Development of Renewable Energies in Germany in 2007*, p. 7 (2008), http://download.inogate.org/Seminar%201516%20April%202008%20%93EE.

[21] A German household installing DG in 2009 earned 26 eurocents per kilowatt hour generated. Christopher Konrad et al, *Distributed Generation Potential in the German Residential Sector*, Cogeneration & On-Site Power Production, http://www.cospp.com/articles/print/volume-10/issue-2/features/distributed-generation-potential-in-the-german-residential-sector.html (last accessed Dec. 22, 2011).

[22] Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety, *Federal Environment Minister Röttgen: 20 Percent Renewable Energies are a Great Success*, Aug. 30, 2011, http://www.bmu.de/english/current_press_releases/pm/47744.php.

[23] *Cf.* Jim Rossi, *The Limits of a National Renewable Portfolio Standard*, 42 Conn. L. Rev. 1425, 1453 (2009-2010) (arguing for distortions in the context of renewable portfolio standards).

constraints, the inability to store electricity, and strong government regulation. FITs may change the electricity markets, but they will not affect the markets' underlying efficiency.

FITs have distorted the market for manufacturing renewable generation systems.[24] A rapid shift to DG could cause price spikes undercutting state renewable goals. In the long run, though, new investment should drive down prices and improve performance through competition.

A recent study of Germany's FIT suggests that it successfully led to the deployment of significant new amounts of renewables, but that it was not an efficient allocation of resources.[25] This finding probably arises from Germany initially setting its FIT too high.[26] Now that Germany's FIT has come down, it is reasonable to believe that future studies will show the increasing cost-effectiveness of Germany's FIT.

Critics argue that FITs subsidize foreign manufacturers.[27] This criticism is especially weak. First, FITs create an opportunity for domestic manufacturers to produce new products and offer a non-outsourceable market for installation and repair.[28] Second, unlike imported fossil fuels (which must be reimported upon consumption), an initial DG investment continues providing power for over twenty years. DG reduces net imports, especially if increased electric vehicle use decreases oil imports.[29] Third, many American companies profit from foreign manufacturing by contributing components and intellectual property.[30] Finally, the United States can offset trade imbalances by exporting fossil fuels displaced by DG.[31]

iv) States Have Ambitious Plans to Encourage Renewable Energy

Many states want to increase renewable energy use within their borders. States offer a wide variety of subsidies and loans to promote renewable energy.[32] Under the FPA, states retain authority over the composition of electricity sources used within their jurisdiction. [33] Over thirty states, including Michigan, have used this authority to create Renewable Portfolio Standards

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[24] Manuel Frondel, et al., *Economic Impacts From the Promotion of Renewable Energy Technologies*, Ruhr Economic Papers, pp. 18-19 (2009), http://repec.rwi-essen.de/files/REP_09_156.pdf.
[25] *Id.*
[26] BusinessGreen.com, *Germany Edges Toward Feed-in Tariff Reduction*, Feb. 24, 2010, http://www.businessgreen.com/bg/news/1805138/germany-edges-feed-tariff-decision.
[27] Tom Zeller, Jr. and Keith Bradsher, *Schumer Seeks to Block Stimulus Money for Chinese-Backed Texas Wind Farm*, The New York Times, Nov. 5, 2009, http://green.blogs.nytimes.com/2009/11/05/schumer-seeks-to-block-stimulus-funds-for-chinese-backed-texas-wind-farm/?scp=1&sq=schumer%2520wind%2520turbine&st=cse.
[28] Union of Concerned Scientists, *California Legislature to Reconsider Renewable Energy Standard* (2010), http://www.ucsusa.org/news/press_release/california-renewable-electricity-standard-0409.html#_ftn1.
[29] *Cf.* Greg Barker, *UK can Learn from Germany's Feed-in Tariff Lessons*, The Guardian, March 21, 2011, http://www.guardian.co.uk/environment/2011/mar/21/germany-feed-in-tariff (Describing the billions of dollars of energy imports Germany has avoided through its FIT).
[30] Adam Aston, *Can China Go Green?*, Business Week, May 14, 2009, http://www.businessweek.com/magazine/content/09_21/b4132040805185.htm.
[31] *See* Keith Bradsher, *China Leading Global Race to Make Clean Energy*, The New York Times, Jan. 30, 2010, http://www.nytimes.com/2010/01/31/business/energy-environment/31renew.html?_r=1.
[32] *See generally* the Database of State Incentives for Renewable Energy, http://www.dsireusa.org/.
[33] *Id.* at ¶ 61,266-67.

(RPS).[34] RPS programs vary by state, but require IOUs to deliver specified amounts of electricity from renewable sources by a certain date. Michigan requires IOUs to generate 10% of their electricity from renewable sources by 2015.[35] New Jersey requires 22.5% from renewable sources by 2020, with carveouts requiring specific amounts of solar and offshore wind.[36] However, RPS programs are not as effective as FITs.[37]

b) Federal Energy Politics and Legislation

Federal energy politics have hindered the growth of renewable energy and prevented state-level solutions. This has kept America from responding to serious energy and environmental challenges. Moreover, America has been prevented from garnering the benefits of DG and FITs.

i) Federal Energy Politics Hinder State-Level Progress on Renewables

Despite the benefits of FITs, federal authority, which extends to all interstate transmissions of electricity and wholesale electricity rates, hinders this solution.[38] States lack unilateral authority to set wholesale electricity rates without FERC approval. State FITs are illegal absent Congressional action.

Federal interstate commerce jurisdiction covers the electricity market, with authority largely delegated to FERC. FERC regulates wholesale rates in interstate commerce[39] and all electrical transmission.[40] FERC authority extends to agreements between independent generators and IOUs.[41]

Federal law requires all rates to be just and reasonable. [42] Modern federal energy regulation presumes the outcome of competitive electricity markets to be the discovery of just and reasonable rates.[43] FERC regulates wholesale rates under the filed rate doctrine. This requires generators to file tariffs with FERC showing that they lack influence in a local market sufficient

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[34] U.S. Energy Information Agency, *Most States Have Renewable Portfolio Standards, Mandates, or Goals 2010*, (Sept. 2011), http://www.eia.doe.gov/energy_in_brief/images/charts/renewable_portfolio_standards_map-large.gif.
[35] MCL § 460.1001 *et seq*. (Lexis 2011). *See also* Database of State Incentives for Renewables & Efficiency, *Michigan* (2011), http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=MI16R&re=1&ee=1.
[36] Database of State Incentives for Renewables & Efficiency, *New Jersey* (2011), http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ05R&re=1&ee=1.
[37] Wilson Rickerson & Robert Grace, *The Debate over Fixed Price Incentives for Renewable Electricity in Europe and the United States: Fallout and Future Directions*, Heinrich Boll Foundation, p. 74 (2007).
[38] *New York v. FERC*, 535 U.S. 1, 23-24 (2002).
[39] 16 U.S.C. § 824b (Lexis 2011).
[40] *Entergy Louisiana, Inc. v. Louisiana Pub. Service Comm.*, 539 U.S. 39, 41 (2003).
[41] *Western Mass. Elec. Co. v. FERC*, 165 F3.d 922 (1999, App. DC).
[42] 16 U.S.C. § 824d(a) (2011) (requiring just and reasonable rates).
[43] Previously, FERC directly set wholesale rates. Price discovery requires regulators to create and enforce competitive market rules. The subsequent rates are presumed to result from the efficient forces of supply and demand and thus become the wholesale rates. *See* Mark S. Hegedus, *Points Well-Taken: Commentary on Professor Peter Carstensens' Paper "Creating Workably Competitive Markets in Wholesale Energy,"* 1 Envtl. & Energy L. & Pol'y J. 145 (2005-2007). *Morgan Stanley Capital Group Inc. v. Pub. Util. Dist. No. 1*, 555 U.S. 941 (2008) (presuming competitive markets to be just and reasonable).

to distort competitive forces.[44] Thus, where market power is absent, the market is presumed to be functioning properly, and any resulting rate is consequently just and reasonable. States retain the authority to set retail rates.[45]

There are only two ways to create a true FIT: Congress can either create a FIT or prevent FERC from interfering with state FITs.[46] Unfortunately, federal energy legislation remains gridlocked.[47] Congress has not passed major energy legislation in six years, despite overwhelming evidence that traditional generation contributes to climate change, China's growing renewable industry, huge market shifts from the plummeting price of natural gas, the Gulf oil spill, and Japan's nuclear crisis.[48]

A clear national policy would be the best way to signal markets, leading to increased renewable investment. Congress remains unable to address these modern challenges and opportunities, while preventing state-level solutions.[49] This results in three problems: 1) states are limited in the actions they can take; 2) economies of scale from nationwide action are nonexistent; and 3) federal financial support for state policies is diluted. This is the worst of both worlds: Congress will not act, and states cannot act.[50]

However, FERC has recently exercised its authority over electricity markets to craft rules encouraging integration and fair competition between renewables and conventional generation sources. Although FERC lacks authority to unilaterally institute new laws,[51] it quietly opened a backdoor to state-by-state deployment of quasi-FITs through new interpretations of energy legislation in two recent Orders.

ii) Federal Energy Legislation May Undermine FERC's Orders

The 1978 Public Utility Regulatory Policies Act (PURPA), codified at 16 U.S.C. § 824a-3, requires FERC to promote small, independently-operated plants, called Qualifying Facilities (QFs).[52] QFs are either: (1) facilities that generate electricity and harness useful heat or steam, or (2) facilities that produce electricity from renewable sources but generate less than 80 mW.[53]

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[44] 16 U.S.C. § 824d (c) (2011). Properly filed rates cannot be overruled by state agencies under the supremacy clause. *Nantahala Power & Light Co. v. Thornburg*, 476 U.S. 953 (1986).
[45] *Federal Power Com. v. Conway Corp.*, 426 U.S. 271 (1976); *see* 16 U.S.C. § 796(15) (Lexis 2011).
[46] *Supra* note 12 at 112.
[47] Nancy E. Soderberg, *Investments in Climate Change Solutions can Break the Global Logjam*, The Hill (Sept. 23 2010), http://thehill.com/blogs/congress-blog/energy-a-environment/120591-investments-in-climate-change-solutions-can-break-the-global-logjam.
[48] *But see* the American Reinvestment and Recovery Act of 2009, Pub. L. No. 111-5 (Lexis 2011) (Allocating billions of dollars for deploying renewable generation).
[49] *Supra* note 12.
[50] *See supra* note 12 at 115-6.
[51] *Supra* note 12 at 97.
[52] Qualifying facilities are facilities that qualify for PURPA's benefits. These facilities are operated by companies independent of local IOUs. Pub. L. No. 95-617 (Lexis 2011), *codified at* 16 U.S.C. § 824a-3(a) (Lexis 2011).
[53] 16 U.S.C. § 796(18)(a).

PURPA authorized states to regulate QFs which sell all of their power in-state,[54] including the authority to set wholesale rates.[55]

Between 1978 and 1992, nearly 146 gW of QF power was constructed.[56] PURPA requires IOUs to purchase all of a QF's electrical output before purchasing from traditional generators or supplying electricity from their own generation units.[57] PURPA was intended to promote new investment in renewable energy through guaranteed market access by breaking IOUs' monopoly.[58]

FERC delegated responsibility to ensure non-discriminatory rates to state PUCs[59] under the "avoided cost" doctrine.[60] This doctrine prohibits rates that exceed the difference between an IOU's cost of purchasing from QFs and the IOU's cost of generating its own electricity.[61] Still, some PUCs promote QFs through higher rates.[62]

However, the Energy Policy Act of 2005 (EPAct 2005), codified at 16 U.S.C. § 824a-3(m)(3), may undermine QFs larger than 20 mW by authorizing IOUs to petition FERC to relieve their mandatory purchase obligation in a particular market.[63] FERC must grant a petition if a QF possesses non-discriminatory access to either:

> (1) an independently administered, auction-based day ahead and real time wholesale market for the sale of electric energy; and wholesale markets for long-term sales of capacity and electric energy; or (2) transmission and interconnection services provided by a Commission-approved regional transmission entity and administered pursuant to an open access transmission tariff that affords nondiscriminatory treatment to all customers with competitive wholesale markets that provide a meaningful opportunity to sell capacity to buyers other than the utility to which the qualifying facility is interconnected.[64]

In most of the country, QFs larger than 20 mW face a rebuttable presumption that these market conditions exist.[65] A QF possesses two defenses against this presumption: (1) unique

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[54] 16 U.S.C. § 824a-3; 18 C.F.R. §§ 292.303(c), 292.306(a) (Lexis 2011).
[55] 18 C.F.R. § 292.302(e)(1) (Lexis 2011).
[56] Thomas J. Zimmer, *3-70 Energy Law and Transactions*, § 70.16 (2010).
[57] 16 U.S.C. § 824a-3(b).
[58] 16 U.S.C. § 824a-3(a)(2).
[59] 16 U.S.C. § 824a-3(f)(1).
[60] 16 U.S.C. § 824a-3.
[61] 16 U.S.C. § 824a-3(d).
[62] Energy Information Administration, *Renewable Energy 1998: Issues and Trends*, DOE/IEA-0628(98) (March 1999).
[63] 109 Pub. L. No. 109-58 (Lexis 2011) *codified at* 16 U.S.C. § 824a-3(m)(3) (Lexis 2011); Many IOUs have refrained from using this provision. A LexisNexis search for cases citing 18 C.F.R. §292.310 (the regulations implementing this provision) revealed only nineteen instances of IOUs petitioning under this authority before April 26, 2011.
[64] 16 U.S.C. § 824a-3(m)(1).
[65] This includes the Midwest Independent Transmission System Operator (which includes Michigan), PJM Interconnection, ISO New England, New York Independent System Operator, the California Independent System

characteristics that prevent it from gaining open market access or (2) an overall transmission constriction preventing open market access.[66] In contrast, there is a rebuttable presumption that QFs smaller than 20 mW face discriminatory access to open markets, regardless of the QF's location or unique characteristics.[67]

Part 2

FERC's Expansive Orders Will Bring Feed-in Tariffs to America

FERC's recent Orders give states flexibility to include a variety of tangible expenses when setting QF rates. FERC could not create true FITs, because rates must be tied to avoided costs. But FERC broadened its definition of avoided costs and used the multi-tiered doctrine to allow higher rates of compensation for renewables which, in conjunction with the mandatory purchase requirement, approximate the benefits of FITs. These new interpretations combined with state subsidies should incentivize renewables, especially DG.

a) Background and Procedural History of the Orders

California adopted legislation requiring it to reduce greenhouse gas emissions to 1990 levels by 2020.[68] To reach this goal, California's RPS requires that 33% of electricity come from renewable sources by 2020.[69] In 2007, California adopted the Waste Heat and Carbon Emissions Reduction Act (WHCERA) to reduce carbon emissions and drive efficiency through sub-20 mW combined heat and power (CHP) systems.[70] WHCERA allowed end-users to deploy CHP systems and sell excess capacity to IOUs.[71] These CHP systems had to file ten-year rate tariffs with the California Public Utilities Commission (CPUC) at a price set by CPUC.[72] CPUC intended to include compensation for the heat benefits of CHP in these rates. These rates had to be just and reasonable, but would exceed the value of electrical output alone by including compensation for the benefits of using heat.[73]

In May 2010, CPUC asked FERC for a declaratory judgment finding that CPUC's CHP rates did not violate 16 U.S.C. §§ 824(d)-(e) of the FPA and 16 U.S.C. § 824a-3 of PURPA; in response, California's IOUs asked FERC to find the rates in violation.[74] On July 15, 2010, in *123 FERC ¶ 61,047*, FERC held that CPUC could set rates through its authority to regulate wholesale QF rates under the avoided cost doctrine.[75] Although WHCERA was not originally implemented under PURPA, FERC found that such rate setting would not conflict with federal statutes if

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Operator, the Electric Utility Reliability Council of Texas, and the Southwest Power Pool. 18 C.F.R. §§ 292.309 (c), (e)-(g).

[66] *E.g.*, 18 C.F.R. § 292.309(e)(1)-(2).

[67] 18 C.F.R. § 292.309 (d).

[68] A.B. 32 Chapter 488, Leg. 2008 (California, Lexis 2011).

[69] State of California Air Resources Board, *Resolution 10-23* (2010), http://www.arb.ca.gov/regact/2010/res2010/res1071.pdf.

[70] Cal. Pub. Util. §§ 2840.4, 2840.6 (Lexis 2011).

[71] Cal. Pub. Util. § 2841.5.

[72] Cal. Pub. Util. § 2841(b).

[73] *Supra* note 68.

[74] *Cal. PUC*, 133 FERC ¶ 61,059, at 61,261 (2010).

[75] *Id.* at ¶ 61,264.

facilities were QFs.[76] Due to gaps in the record, FERC did not rule on the specific rates proposed by CPUC.[77]

b) FERC Granted Most of CPUC's Requests Regarding Avoided Cost

CPUC subsequently filed a request for clarification or rehearing to bypass case-by-case rate litigation and to determine CPUC's latitude to set avoided costs.[78] In reviewing CPUC's request, FERC went beyond the scope of *123 FERC ¶ 61,047* with its subsequent Order, *133 FERC ¶ 61,059*. CPUC initially requested clarification of (1) what factors CPUC could include in determining rates; and (2) whether the avoided cost must equal the lowest cost of acquiring electricity.[79]

In requesting a clarified definition of avoided costs, CPUC sought authority to consider three factors: contract length; CHP system efficiency; and project location.[80] CPUC argued that FERC regulations already allowed PUCs to determine avoided costs based on: state requirements for specific technology deployments;[81] the time of delivery; and the effect on peak load.[82] CPUC also requested the right to include avoided tangible expenses, such as new transmission lines and reduced electrical congestion.[83] Finally, CPUC argued for including intangible environmental benefits in avoided costs.[84]

FERC granted most of CPUC's requests and agreed with CPUC's interpretation of existing regulations. FERC held that in determining an IOU's avoided cost, CPUC can include: the utility's system cost data; the benefits of the contract terms, including duration; the effect of the QF on electricity supply, including on peak demand hours; the relationship between the QF's output and the IOU's ability to avoid concrete costs; and compensation for electricity that would be lost in transmission from more distant sources.[85] FERC did not allow CPUC to include intangible benefits in avoided cost rates.[86]

c) The Multi-Tiered Doctrine is Likely to Encourage More Renewable Power Through Revisions to State RPS Requirements

The Orders will expand states' use of their pre-existing power to prefer certain power sources through the multi-tiered rate doctrine.[87] In the Orders, FERC held that PUCs can set different avoided costs for different generation sources based on supply characteristics, allowing different rates for different types of generation.[88] Instead of the avoided cost being the lowest

[76] *Id.* at ¶ 61,264.
[77] *Id.* at ¶ 61,065.
[78] *Id.* at ¶ 61,264.
[79] *Id.* at ¶ 61,265.
[80] *Id.*
[81] *Id.*
[82] *Id.* (*citing* 18 C.F.R. §§ 292.304(d)(1) and (2) (2010)).
[83] *Id.* at ¶ 61,267.
[84] *Id.* at ¶ 61,267-68.
[85] *Id.* at ¶ 61,268.
[86] *Id.* at ¶ 61,268.
[87] The multi-tiered doctrine allows different rates for different types of facilities. *Id.* at ¶ 61,266-67.
[88] *Id.* at ¶ 61,265-66.

average cost of an additional watt, PUCs can now calculate separate avoided costs for each generation source required under an RPS. Thus, if a state requires 3% of electricity from rooftop solar, the rate for rooftop solar equals an IOU's avoided cost for a unit of rooftop solar. Rooftop solar is incentivized because such rates are higher than the average rate paid for traditional generation. DG developers benefit where they can build and operate DG plants below this average rate.

Under the multi-tiered doctrine, DG receives a smaller boost in states with RPS programs lacking carveouts for specific renewable technologies. In such states, a unit of rooftop solar's rate is the average cost of a unit from all renewable sources. Where low-cost wind power drives down the average cost of renewable generation, relatively expensive alternatives, like rooftop solar, are less competitive. In states without an RPS, there would be no incentive to develop DG under the multi-tiered doctrine, because the avoided cost equals the average cost of all generation, including inexpensive sources like large coal plants.

States wishing to promote DG should add specific carveouts for economically viable types of DG to their RPS programs. Cutting-edge technologies should receive special carveouts to promote their development. Low-cost, mature renewable technologies, like large wind, should compete on price under a general RPS without the assistance of carved-out rates. However, as more carveouts are created, states, rather than the marketplace, will increasingly be picking technological winners and losers, potentially causing an inefficient allocation of resources in sub-optimal technologies.

d) States Still Maintain Sovereignty Over a Wide Variety of Incentives

While the Orders prohibit PUCs from directly including environmental benefits in avoided costs, the Orders clarify that states retain full authority to encourage renewable energy through tools other than wholesale rate setting. The Orders clarify that Renewable Energy Credits (RECs) are outside FERC's regulatory jurisdiction.[89] RECs are commodities regulated by state law tied to each unit of renewable electricity.[90] Some states allow IOUs to meet their RPS requirements by offsetting conventional generation with RECs.[91] Selling RECs makes renewable QF's more attractive to investors by giving them two marketable products – electricity and RECs. States also retain authority to provide additional incentives for renewable projects, such as subsidies, loans, and tax credits.[92] Where all incentives – quasi-FITs, well-designed RPS carveouts, mandatory purchase requirements, RECs, and subsidies - work in harmony, states now possess a variety of tools to incentivize significant renewable growth. Such incentives are particularly effective when applied to DG because it bypasses the traditional roadblocks to renewable energy development.

[89] *Id.* at ¶ 61,268.
[90] *Xcel Energy Servs., Inc. v. FERC*, 407 F.3d 1242 (2005).
[91] *See* Claire Kreycik, *California Tradable REC Decision Issued*, National Renewable Energy Laboratory, Jan. 24, 2011, http://financere.nrel.gov/finance/content/california-tradable-rec-decision-issued.
[92] *Supra* note 74 at fn. 62; *CGE Fulton, LLC*, 70 FERC ¶ 61,290 (1995).

e) FERC's Definition of Avoided Costs Allows PUCs to Craft More Effective Energy Policy

In evaluating CPUC's proposal, FERC required that avoided costs be: "(1) just and reasonable to electric consumers and in the public interest; (2) not discriminatory against QFs; and (3) not in excess of 'the incremental cost to the electric utility of alternative electric energy.'"[93] PUCs can use these principles to establish avoided costs that achieve their energy goals.

PUCs should have little difficulty setting just and reasonable rates that are in the public interest. The Court has repeatedly held that there is no single "just and reasonable" rate, providing great deference to PUC rate decisions.[94] Because the Orders do not define "public interest," FERC will defer to PUC decisions establishing higher rates for tangible public benefit.

Higher rates for renewable QFs do not discriminate against non-renewable QFs. Where the mandatory purchase requirement exists, discrimination is absent because all QFs are guaranteed to sell all of their output. Where this requirement is absent, renewable QFs' higher rates actually favor purchases from less expensive non-renewable QFs above 20mW.

The FPA implicitly allows states a degree of discrimination among generators by allowing them to prefer certain generation sources. The multi-tiered doctrine makes IOUs indifferent to higher rates where an RPS includes carveouts, because IOUs would otherwise be obligated to pay similar amounts for their own projects or to purchase RECs. This doctrine benefits renewable QFs without crowding out other industry participants.

Despite these gains, the Orders do not allow true FITs. PUCs remain constrained by the avoided cost doctrine; unlike German regulators, they cannot set rates for the sole purpose of promoting renewable energy. Still, the Orders enable PUCs to implement a FIT's key incentivizing features: clear price signals and a guaranteed market.

Part 3

Subsequent History

The Orders have already survived an internal FERC appeal by the IOUs.[95] Courts are likely to defer to FERC's decision. With federal energy legislation frozen, the Orders will be in effect for years.

With so much at stake, the Orders may be appealed to the courts, though no complaint is pending.[96] Any appeal is likely to fail because the courts will defer to FERC's decisions. Under *U.S. v. Mead Corp.*, 533 U.S. 218 (2001), courts afford agencies great deference when reviewing formal agency decisions.[97] In *Mead*, the Court considered an agency decision to be informal because it was made in an advisory letter; was intended to apply only to the instant party; was issued by a rank-and-file employee of the agency; and was one of thousands of such decisions

[93] *Cal. PUC*, 133 FERC ¶ 61,265 (*citing* 16 U.S.C. § 824a-3).
[94] *E.g. FPC v. Texaco, Inc.*, 417 U.S. 380, at 389 (1974).
[95] *Cal. PUC*, 134 FERC ¶ 61,044 (2011).
[96] As of November 4, 2011, LexisNexis contained no appellate history for the Orders.
[97] *U.S. v. Mead Corp.*, 533 U.S. 218 (2001).

each year.[98] The Court granted the agency little deference for this decision because it was informal. In contrast, here FERC published these Orders; they were intended to have precedential value; the Orders were issued by FERC's Commissioners; and they were part of a relatively small number of such orders made in a year.[99] Because this was a formal decision, courts will give FERC strong deference.

Under *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.,* 467 U.S. 837 (1984), courts first ask whether a statute is clear on its face.[100] Courts have found the FPA's definitions of "avoided cost" and "just and reasonable" to lack sufficient clarity to substitute a judicial decision for FERC's expert interpretation.[101] Consequently, the courts would proceed to *Chevron's* second step, and ask whether FERC's interpretation is reasonable, while affording FERC's expertise a great deal of deference because the decision was formally made.[102] As FERC clearly explains in its Orders, its interpretation is consistent with the FPA and PURPA.[103] Moreover, the interpretations are reasonable because the Orders support PURPA's statutory purpose of promoting independently owned renewable generation.[104] Because of the high level of deference courts accord in these situations, a reviewing court is almost certain to uphold the Orders.

Part 4
Challenges and Opportunities

The Orders will interact with existing regulations to increase the appeal of sub-20 mW DG. They will spur RPS modifications which add statutory carveouts for maturing renewable technologies. However, states will also face large challenges. First, they must change regulations for connecting new generation to the distribution grid. Second, they must find the proper levels for FITs.

a) The Energy Policy Act of 2005 Endangers Mid-size QFs, but Will aid DG

The Orders' impact is tied to FERC Order No. 688-A's (688-A) implementation of EPAct. Order 688-A creates a rebuttable presumption which allows IOUs in many regions to submit market-wide petitions to FERC to withdraw from PURPA's mandatory purchase requirement.[105] The mandatory purchase requirement has been essential to the development of the independent power industry because it guarantees a market for projects not owned by IOUs, while preventing the exercise of IOU monopsony power.[106] This guarantee greatly aids project

[98] *Id*.
[99] *Cal. PUC.*, 123 FERC ¶ 61,047 and *Cal. PUC.*, 133 FERC ¶ 61,059.
[100] *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984).
[101] For example, the Court has held there is no single definition of "just and reasonable." *E.g. FPC v. Texaco, Inc.*, 417 U.S. 380, 389 (1974). *See generally Consolidated Edison Co. v. Public Service Com.*, 470 U.S. 1075 (1985).
[102] *See id*; *supra* note 97 (discussing the importance of formality in determining deference).
[103] *Cal. PUC*, 134 FERC ¶ 61,160-61.
[104] *See S. Cal. Edison Co. v. FERC*, 195 F.3d 17 (1999) (Giving FERC strong deference where interpretation is consistent with a statute's goals).
[105] *Order No. 688*, FERC Stats. & Regs. ¶ 31,233.
[106] Most modern energy markets are now presumed to be fluid enough to no longer necessitate such a requirement because no entity is allowed to gain market power. *See supra* notes 65 and 66.

finance. Several IOUs have successfully petitioned against QFs producing more than 20 mW.[107] The Orders may create an IOU exodus from PURPA. In June 2011, as part of a larger settlement related to the CHP program, FERC approved market wide petitions by every major California IOU to withdraw from their mandatory purchase obligations.[108] FERC granted these petitions relying on the rebuttable presumption.[109]

IOUs' ability to petition FERC to withdraw from the mandatory purchase requirement is a check on FITs for larger QFs. PUCs must set low FITs for QFs larger than 20 mW. Otherwise, the cost of expensive FITs encourages IOUs to file a withdrawal petition. This may destabilize PUCs by dismantling the QF structure. Without the mandatory purchase requirement, relatively expensive mid-size renewable QFs may be uncompetitive where the state lacks RPS carveouts for mid-size QFs. In that case, IOUs must still obtain such electricity on their own or through the open market to meet their RPS obligations.

b) These Regulations Will Interact to Encourage DG

IOUs' ability to petition for relief from the mandatory purchase requirement favors sub-20 mW QFs. Small QFs become more attractive because of 688-A's rebuttable presumption against withdrawal for purchases from QFs smaller than 20 mW. FERC has refused to allow IOUs to withdraw from mandatory purchase requirements for sub-20 mW QFs.[110] Instead of allowing market-wide petitions like those used for larger QFs, IOU petitions against sub-20 mW QFs must be based on particularized facts on a QF-by-QF basis.[111] Such petitions are significantly more difficult and expensive. At the least, an IOU must prove as - a matter of fact - that a specific QF actively participates in the local market or is owned by a company with nondiscriminatory market access.[112] FERC's ruling in *Public Serv. Co.*, 131 FERC ¶ 61,027 (2010) suggests that an IOU may be required to show more than this.[113] The cost of petitioning against hundreds of small QFs probably outweighs the benefits of success.

FERC draws this bright line solely on QF capacity; FERC appears indifferent to QF developers leveraging this rule to obtain the rebuttable presumption.[114] This may encourage plants now producing marginally more than 20 mW to shut down portions of their plants and recertify as sub-20 mW QFs in markets where IOUs have successfully petitioned against larger QFs.[115] It will

[107] *E.g.*, *Commonwealth Edison Co.*, 135 FERC ¶ 61,005 (2011).
[108] *Pac. Gas & Elec. Co.*, 135 FERC ¶ 61,234 (2011).
[109] *See Public Serv. Co.*, 131 FERC ¶ 61,027 (2010); *but see Xcel Energy Servs.*, 124 FERC ¶ 61,073 (2008) (rejecting a petition in a market where the rebuttable presumption was not in effect, because petitioner did not demonstrate the existence of a competitive market).
[110] *See Public Serv. Co.*, 131 FERC ¶ 61,027 (2010).
[111] *Id.* at ¶ 61,185.
[112] *Id*. at ¶ 61,185; *Order No. 688*, 119 FERC ¶ 61,305, at 62,692-94 (2007).
[113] *Public Serv. Co.*, 131 FERC ¶ 61,027 at n. 16.
[114] *See Detroit Edison Co.*, 131 FERC ¶ 61,039 at 61,252-53 (2010) (Stating FERC would not allow an IOU to withdraw against a single developer operating multiple 19 mW QFs whose net capacity in a single market exceeded 20 mW).
[115] IOUs may challenge certifications. *Detroit Edison Co.*, 131 FERC ¶ 61,039 at n. 14 (2010). *Cf. Commonwealth Edison Co.*, 135 FERC ¶ 61,005 (2011) (Suggesting plants may recertify after significant modification).

also lead to more new sub-20 mW QFs, because such financing will be less risky with the mandatory purchase requirement securely in place.

Instead of serving as a check on PUC's avoided cost calculations, Order 688-A, as applied to sub-20 mW QFs, supports PUCs wishing to incentivize DG. In states with RPS requirements, the Orders allow PUCs to use the multi-tiered doctrine to create very specific avoided cost segments.[116] For example, states could require 1% of electricity from sub-20 mW rooftop solar, with rates reflecting only the cost of that unit tier. These carveouts will attract investors to such projects because they offer higher than rates for investing in traditional projects. The guaranteed market for small plants makes the investment safer, spurring growth. To be profitable, each QF must still be competitive within its own tier, which should prevent consumer rates from rising excessively. States can incentivize renewable DG investment by revising RPS portfolios to include well-designed carveouts, creating additional pathways to the achievement of renewable goals.

c) QF Permits Could Overwhelm Local Authorities and Create Gridlock

FITs are likely to create significant amounts of new DG through financial incentives and by bypassing the siting and transmission challenges faced by large projects. Nonetheless, DG growth will encounter its own problems. While DG is generally praised for not requiring new transmission, California DG projects are already experiencing bottlenecks in connecting to local distribution grids.[117] Interconnection regulations and the agencies that oversee them were not designed for a DG revolution. These regulations must be streamlined for DG and staffing must increase.[118] The future of DG, FITs, and the new energy revolution will hinge on the success of these reforms.

d) Setting The Proper Rates For FITs Will Be Difficult

The Orders did not address whether specific rates for CHPs were compatible with PURPA,[119] addressing only the process that CPUC used to calculate such rates.[120] Ratemaking procedures are underway, with interested parties currently petitioning CPUC in light of the Orders.[121] No rates have been challenged yet, but future challenges from all sides are likely. QFs and environmental groups will try to leverage FERC's Orders into higher rates, while IOUs and

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[116] 133 FERC ¶ 61,265.
[117] *Renewables Portfolio Standard Quarterly Report: 4th Quarter 2010*, p. 7 (2010) http://www.cpuc.ca.gov/NR/rdonlyres/CFD76016-3E28-44B0-8427-3FAB1AA27FF4/0/RPSQuarterlyReporttotheLegislatureQ4_2010.pdf.
[118] *Id.* at 7-12.
[119] *Cal. PUC*, 133 FERC ¶ 61,059 at nn. 46, 47.
[120] *Id.* at ¶ 61,266.
[121] Rulemaking 11-05-005, California Public Utilities Commission (2011). *See e.g. Initial Comments of Fuelcell Energy on October 13, 2011 Staff Proposal*, Order Instituting Rulemaking to Continue Implementation and Administration of California Rulemaking Renewables Portfolio Standard Program, Rulemaking 11-05-005 (2011), https://www.pge.com/regulation/RenewablePortfolioStdsOIR-IV/Pleadings/FCE/2011/RenewablePortfolioStdsOIR-IV_Plea_FCE_20111102_221337.PDF.

ratepayer advocacy groups will seek lower rates. Absent improper procedures, FERC will uphold CPUC's initial determinations because it defers to PUCs in such fact-specific proceedings.[122] Setting FITs is a crucial legal issue for states. Starting cautiously with low rates allows states to build up favorable rate decisions. But, as the Orders demonstrate, the current Commissioners support FITs. PUCs should not squander the opportunity for a favorable ruling before the composition of the Commission changes.

Setting FITs is also a crucial economic problem: too low and no new DG is deployed; too high and DG gets over-deployed, increasing consumer rates. Even supporters concede that Germany's initial FIT was too high.[123] Nonetheless, future rates can be adjusted, and, more importantly, Germans' electrical bills did not increase significantly.[124] American FITs will also benefit from Germany's experience.

Regardless of rate disputes, the overarching principle is that FERC defers to PUC rates that are based on the avoided cost framework. The upper limits of rates may be found in the congressional intent behind PURPA: to prevent efficient plants from cross-subsidizing smaller, less efficient ones.[125] This will keep PUCs from setting rates that significantly exceed avoided costs. IOU threats to withdraw from the mandatory purchase requirement will have a similar effect.

FITs will continue to be opposed by IOUs because FITs threaten IOUs' profits. State PUCs regulate the retail rates IOUs charge consumers.[126] PUCs calculate these consumer rates based on several factors, including the cost of electricity to the IOU,[127] but these rates are readjusted infrequently.[128] IOU profitability depends on accurate forecasting. Because it is difficult to predict how many FIT-eligible projects will be constructed, FITs introduce uncertainty into electrical markets, increasing financial risk to IOUs. If QFs using FITs proliferate, poor PUC forecasting could squeeze IOU profits between relatively low retail rates and expensive FIT wholesale rates.[129] To secure support from IOUs, PUCs that adopt FITs must adjust retail rates to account for new portfolio balances and should undertake more frequent rate adjustments during the initial years of the program. IOUs also face the prospect of stranded costs from

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[122] 18 C.F.R. § 292.304(e) (2010); *see American REF-FUEL Company of Hempstead*, 47 FERC ¶ 61,161, at 61,533 (1989)
[123] *Supra* note 29.
[124] Damian Miller, *Power From on High*, the New York Times, Nov. 23, 2010, https://www.nytimes.com/2010/11/24/opinion/24iht-edmiller.html.
[125] *Public Utility Rate Proposals of President Carter's Energy Program: Hearings Before the Subcomm. on Energy Conservation and Regulation of the Senate Comm. on Energy and Natural Resources*, 95th Cong., 1st Sess. pt. 1, at 189 (1977).
[126] *Federal Power Comm'n v. Conway Corp.*, 426 U.S. 271 (1976); *see* 16 U.S.C. § 796(15).
[127] *See e.g.*, California Public Utilities Commission, *Frequently Asked Questions: How Your Electricity Bill is Calculated* (2010), http://www.cpuc.ca.gov/NR/rdonlyres/6AF20251-011C-4EF2-B99D-74CA315A4C40/0/RatesFAQ0710_3.pdf.
[128] *See* Edison Electric Institute, *Rising Electricity Costs: A Challenge for Consumers, Regulators, and Utilities*, p. 1 (2006), http://www.entergy.com/global/documents/utility/industry/EEi_rising_electricity_costs.pdf.
[129] Large discrepancies between wholesale and retail rates caused an IOU bankruptcy during the California Energy Crisis. Paul L. Joskow, *California's Electricity Crisis*, 17 Oxford Rev. of Econ. Pol'y 3 (2001).

investments in outdated generation facilities without a market for their electricity, especially where RPS programs are significantly modified. These losses would probably be passed along to consumers through higher rates. A cap on total FIT capacity is an essential safety valve to prevent runaway costs initially.

Part 5
Conclusion

Congress has not established a 21st Century energy policy. Every time Congress moves forward, politics or disasters derail negotiations. Absent federal legislation, there remain options to encourage renewable energy, although they lack the efficiency of a national FIT. These Orders, therefore, represent the biggest recent breakthrough for America's energy future by providing PUCs with a new toolset. If PUCs embrace the opportunity, a grassroots green energy revolution could sprout through a smart combination of feed-in tariffs, renewable portfolio standards, and subsidies.

State economies and environments will benefit greatly from adopting legislation and regulations that promote investors' best opportunity under the Orders: sub-20 mW DG systems. By providing loans and subsidies, and by creating RPS carveouts for small-scale DG, states can pioneer new markets for energy from renewable sources helping their environments and economies.